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west virginia department of environmental protection

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

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Thursday, October 20, 2022  
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 ELMER N -14HU  
47-103-03502-00-00

**Extend Lateral, Horizontal Leg Length 234.36' to 16420.32', Total Measured Depth 13560' to 29065'. Updated Lease Chain**

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, is written over a white background.

James A. Martin  
Chief

Operator's Well Number: ELMER N -14HU  
Farm Name: ELNORA TUTTLE  
U.S. WELL NUMBER: 47-103-03502-00-00  
Horizontal 6A New Drill  
Date Modification Issued: 10/20/2022

Promoting a healthy environment.

10/21/2022



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

October 12, 2022

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

RE: Application for Deep Well Permit – API #47-103-03502

COMPANY: Tug Hill Operating, LLC

FARM: Elnora Tuttle Elmer N-14HU Modification


COUNTY: Wetzel DISTRICT: Proctor QUAD: Wileyville

The deep well review of the application for the above company is Approved to drill to Trenton for Point Pleasant completion. Pooling Docket 308-312

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? Yes, but withdrawn.
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

\*\*Elmer N-18HU 47-103-03467; Elmer N-17HU 47-103-03505; Elmer N-16HU 47-103-03504; Elmer N-15HU 47-103-03503; Burch Ridge S-6HU 47-051-02193; Burch Ridge S-7HU 47-051-02194; McMasters S-16HU 47-051-02337; McMasters S-17HU 47-051-02338; McMasters S-18HU 47-051-02339; McMasters S-19HU 47-051-02340; Hillrock S-12HU 47-051-02272; Hillrock S-13HU 47-051-02273; Hillrock S-14HU 47-051-02262; Hillrock S-15HU 47-051-02263; Simms U-5H 47-051-0731

10/21/2022

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      Wetzel      Proctor      Wileyville 7.5'  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Elmer N-14HU      Well Pad Name: Elmer

3) Farm Name/Surface Owner: Elnora Tuttle      Public Road Access: Proctor Creek Road

4) Elevation, current ground: 1,306.96      Elevation, proposed post-construction: 1,276.50'

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

(b) If Gas Shallow  Deep   
Horizontal

CH#  
058338  
\$2500<sup>00</sup>

6) Existing Pad: Yes or No No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Point Pleasant is the target formation at a depth of 11,602' - 11,721', thickness of 119' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 11,871'

9) Formation at Total Vertical Depth: Trenton

10) Proposed Total Measured Depth: 29,065'

11) Proposed Horizontal Leg Length: 16,420.32'

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WV Department of  
Environmental Protection

12) Approximate Fresh Water Strata Depths: 70; 1,009'

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

14) Approximate Saltwater Depths: 1,645'

15) Approximate Coal Seam Depths: Sewickley Coal - 909' and Pittsburgh Coal - 1,003'

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: \_\_\_\_\_

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 <sup>3</sup> (CTS)      |
| Fresh Water/Coal | 20"       | NEW         | J55    | 106.5#                 | 1,125'                     | 1,125'                       | 1,802ft <sup>3</sup> (CTS)    |
| Intermediate 1   | 13 3/8"   | NEW         | J55    | 54.5#                  | 2,950'                     | 2,950'                       | 2,079ft <sup>3</sup> (CTS)    |
| Intermediate 2   | 9 5/8"    | NEW         | HPP110 | 47#                    | 10,874'                    | 10,874'                      | 3,552ft <sup>3</sup> (CTS)    |
| Production       | 5 1/2"    | NEW         | P110   | 23#                    | 29,065'                    | 29,065'                      | 6,843ft <sup>3</sup> (CTS)    |
| Tubing           | 2 7/8"    | NEW         | P110   | 6.5#                   |                            | 11,828'                      |                               |
| Liners           |           |             |        |                        |                            |                              |                               |

*Kimberly L. Luyckx 7-28-22*

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

PACKERS

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

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(11,329'). 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 41,100,000 lb. proppant and 740,000 bbl of water. Max rate = 80bpm; max psi = 9,000#.

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 26.11 acres

22) Area to be disturbed for well pad only, less access road (acres): 7.63 acres

23) Describe centralizer placement for each casing string:

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

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

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

25) Proposed borehole conditioning procedures:

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

\*Note: Attach additional sheets as needed.

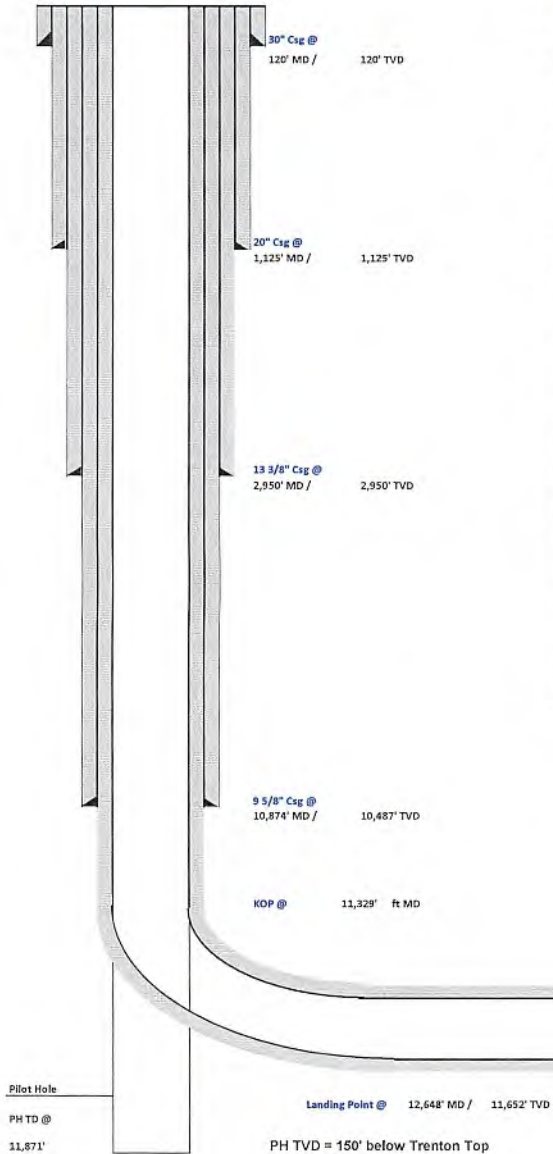


|               |              |          |        |
|---------------|--------------|----------|--------|
| WELL NAME:    | Elmer N-14HU | COUNTY:  | Wetzel |
| STATE:        | WV           | GL Elev: | 1,277' |
| DISTRICT:     | Proctor      |          |        |
| DF Elev:      | 1,277'       |          |        |
| TD:           | 29,065'      |          |        |
| TH Latitude:  | 39.69394992  |          |        |
| TH Longitude: | -80.73760002 |          |        |
| BH Latitude:  | 39.732082    |          |        |
| BH Longitude: | -80.775128   |          |        |

| FORMATION TOPS      |           |
|---------------------|-----------|
| Formation           | Depth TVD |
| Deepest Fresh Water | 1,009'    |
| Sewickley Coal      | 909'      |
| Pittsburgh Coal     | 1,003'    |
| Big Lime            | 2,173'    |
| Berea               | 2,816'    |
| Tully               | 6,728'    |
| Marcellus           | 6,809'    |
| Onondaga            | 6,859'    |
| Salina              | 7,449'    |
| Lockport            | 8,586'    |
| Utica               | 11,373'   |
| Point Pleasant      | 11,602'   |
| Landing Depth       | 11,652'   |
| Trenton             | 11,721'   |
| Pilot Hole TD       | 11,871'   |

| 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            | 1,125'     | 1,125'      | 106.5          | J55    | Surface       |
| Intermediate 1 | 17 1/2         | 13 3/8        | 2,950'     | 2,950'      | 54.5           | J55    | Surface       |
| Intermediate 2 | 12 1/4         | 9 5/8         | 10,874'    | 10,487'     | 47             | HPP110 | Surface       |
| Production     | 8 1/2          | 5 1/2         | 29,065'    | 11,366'     | 23             | HCP110 | Surface       |

| CEMENT SUMMARY |       |       |               | DRILLING DETAILS |  |
|----------------|-------|-------|---------------|------------------|--|
| Type           | Sacks | Class | Density (ppg) | Fluid Type       | Centralizer Notes  |
| Conductor      | 338   | A     | 15.6          | Air              | None   |
| Surface        | 1,943 | A     | 15.6          | Air              | 3 Centralizers at equal distance   |
| Intermediate 1 | 2,253 | A     | 15.6          | Air              | 1 Centralizer every other joint  |
| Intermediate 2 | 3,230 | A     | 14.5          | Air              | 1 Centralizer every other joint  |
| Production     | 7,053 | A     | 16.5          | Air / SOBIM      | 1 every other joint in lateral; 1 per joint in curve; 1 every other joint to surface |



Pilot Hole  
PH TD @  
11,871'

Landing Point @ 12,648' MD / 11,652' TVD

PH TVD = 150' below Trenton Top

Lateral TD @ 29,065' ft MD  
11,366' ft TVD



## Tug Hill Operating, LLC Casing and Cement Program

### Elmer N-14HU

### Casing

|                | String  | Grade  | Bit Size | Depth (Measured) | Cement Fill Up |
|----------------|---------|--------|----------|------------------|----------------|
| Conductor      | 30"     | BW     | 36"      | 120'             | CTS            |
| Surface        | 20"     | J55    | 26"      | 1,125'           | CTS            |
| Intermediate 1 | 13 3/8" | J55    | 17 1/2"  | 2,950'           | CTS            |
| Intermediate 2 | 9 5/8"  | HPP110 | 12 1/4"  | 10,874'          | CTS            |
| Production     | 5 1/2"  | HCP110 | 8 1/2"   | 29,065'          | 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 |

10/21/2022



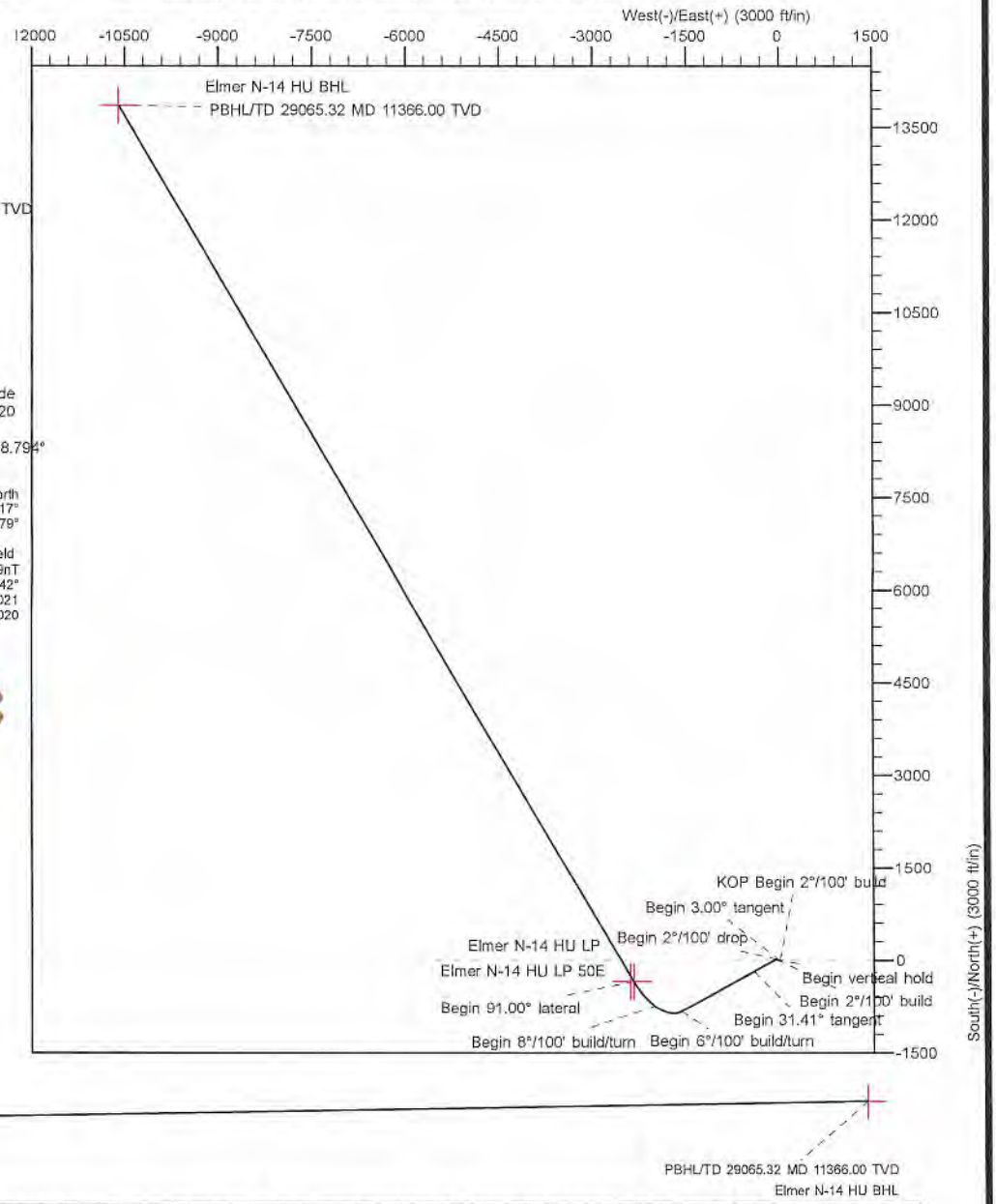
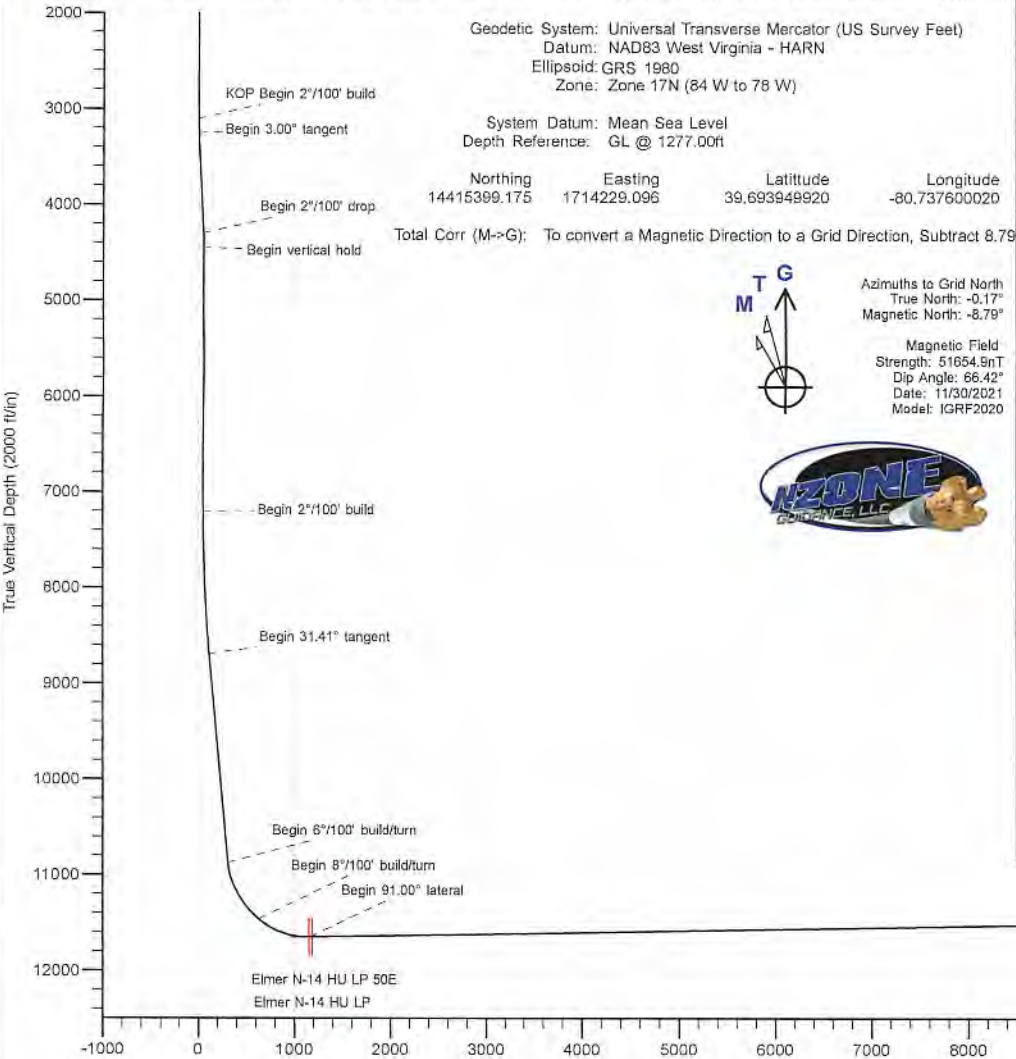
Well: Elmer N-14 HU (slot A)  
 Site: Elmer  
 Project: Wetzel County, West Virginia (UTM17 NAD83)  
 Design: rev1

DESIGN TARGET DETAILS

| Name  | TVD      | +N/-S    | +E/-W     | Northing     | Easting     | Latitude     | Longitude     |
|---|----------|----------|-----------|--------------|-------------|--------------|---------------|
| Elmer N-14 HU BHL   | 11366.00 | 13856.12 | -10591.37 | 14429255.267 | 1703637.743 | 39.732082000 | -80.775128000 |
| - plan hits target center   |          |          |           |              |             |              |               |
| Elmer N-14 HU LP  | 11652.00 | -337.86  | -2396.58  | 14415061.318 | 1711832.537 | 39.693041000 | -80.746123000 |
| - plan misses target center by 43.24ft at 12673.14ft MD (11651.55 TVD, -316.15 N, -2359.17 E) |          |          |           |              |             |              |               |
| Elmer N-14 HU LP 50E  | 11652.00 | -337.86  | -2346.58  | 14415061.318 | 1711882.541 | 39.693040611 | -80.745945245 |
| - plan misses target center by 0.01ft at 12648.02ft MD (11651.99 TVD, -337.86 N, -2346.56 E)  |          |          |           |              |             |              |               |

SECTION DETAILS

| Sec | MD       | Inc   | Azi    | TVD      | +N/-S    | +E/-W     | Dleg | TFace   | V Sect   | Annotation                       |
|-----|----------|-------|--------|----------|----------|-----------|------|---------|----------|----------------------------------|
| 1   | 0.00     | 0.00  | 0.00   | 0.00     | 0.00     | 0.00      | 0.00 | 0.000   | 0.00     |                                  |
| 2   | 3102.00  | 0.00  | 0.00   | 3102.00  | 0.00     | 0.00      | 0.00 | 0.000   | 0.00     | KOP Begin 2°/100' build          |
| 3   | 3252.00  | 3.00  | 295.00 | 3251.93  | 1.66     | -3.56     | 2.00 | 295.000 | 3.48     | Begin 3.00° tangent              |
| 4   | 4302.00  | 3.00  | 295.00 | 4300.49  | 24.88    | -53.36    | 0.00 | 0.000   | 52.18    | Begin 2°/100' drop               |
| 5   | 4452.00  | 0.00  | 0.00   | 4450.42  | 26.54    | -56.92    | 2.00 | 180.000 | 55.65    | Begin vertical hold              |
| 6   | 7203.58  | 0.00  | 0.00   | 7202.00  | 26.54    | -56.92    | 0.00 | 0.000   | 55.65    | Begin 2°/100' build              |
| 7   | 8774.16  | 31.41 | 241.00 | 8695.08  | -176.97  | -424.15   | 2.00 | 241.005 | 116.98   | Begin 31.41° tangent             |
| 8   | 11328.54 | 31.41 | 241.00 | 10875.11 | -822.30  | -1588.58  | 0.00 | 0.000   | 311.42   | Begin 6°/100' build/turn         |
| 9   | 12072.57 | 50.00 | 306.92 | 11461.71 | -740.94  | -2007.41  | 6.00 | 95.571  | 630.41   | Begin 8°/100' build/turn         |
| 10  | 12648.02 | 91.00 | 329.85 | 11651.99 | -337.86  | -2346.56  | 8.00 | 32.765  | 1156.61  | Begin 91.00° lateral             |
| 11  | 29065.32 | 91.00 | 329.85 | 11366.00 | 13856.12 | -10591.37 | 0.00 | 0.000   | 17440.45 | PBHL/TD 29065.32 MD 11366.00 TVD |







Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

|             |  |               |                |
|-------------|--|---------------|----------------|
| Project     | Wetzel County, West Virginia (UTM17 NAD83)     |               |                |
| Map System: | Universal Transverse Mercator (US Survey Feet) | System Datum: | Mean Sea Level |
| Geo Datum:  | NAD83 West Virginia - HARN                     |               |                |
| Map Zone:   | Zone 17N (84 W to 78 W)                        |               |                |

|                       |          |              |                     |            |               |
|-----------------------|----------|--------------|---------------------|------------|---------------|
| Site                  | Elmer    |              |                     |            |               |
| Site Position:        |          | Northing:    | 14,415,313.835 usft | Latitude:  | 39.693715720  |
| From:                 | Lat/Long | Easting:     | 1,714,207.744 usft  | Longitude: | -80.737676810 |
| Position Uncertainty: | 0.00 ft  | Slot Radius: | 13-3/16 "           |            |               |

|                      |                        |         |                     |                     |               |               |
|----------------------|------------------------|---------|---------------------|---------------------|---------------|---------------|
| Well                 | Elmer N-14 HU (slot A) |         |                     |                     |               |               |
| Well Position        | +N/-S                  | 0.00 ft | Northing:           | 14,415,399.175 usft | Latitude:     | 39.693949920  |
|                      | +E/-W                  | 0.00 ft | Easting:            | 1,714,229.095 usft  | Longitude:    | -80.737600020 |
| Position Uncertainty | 0.00 ft                |         | Wellhead Elevation: | ft                  | Ground Level: | 1,277.00 ft   |
| Grid Convergence:    |                        |         |                     |                     |               |               |

| Wellbore  | Original Hole |             |                 |               |                     |
|-----------|---------------|-------------|-----------------|---------------|---------------------|
| Magnetics | Model Name    | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|           | IGRF2020      | 11/30/2021  | -8.626          | 66.424        | 51,654.87644461     |

| Design            | rev1                  |            |               |               |
|-------------------|-----------------------|------------|---------------|---------------|
| Audit Notes:      |                       |            |               |               |
| Version:          | Phase:                | PLAN       | Tie On Depth: | 0.00          |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft)    | Direction (°) |
|                   | 0.00                  | 0.00       | 0.00          | 322.61        |

| Plan Survey Tool Program | Date          |                                |           |         |  |
|--------------------------|---------------|--------------------------------|-----------|---------|--|
| Depth From (ft)          | Depth To (ft) | Survey (Wellbore)              | Tool Name | Remarks |  |
| 1                        | 0.00          | 29,065.32 rev1 (Original Hole) |           |         |  |



Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

| Plan Sections       |                 |             |                     |            |            |                       |                      |                     |         |                   |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|-------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target            |
| 0.00                | 0.00            | 0.00        | 0.00                | 0.00       | 0.00       | 0.00                  | 0.00                 | 0.00                | 0.000   |                   |
| 3,102.00            | 0.00            | 0.00        | 3,102.00            | 0.00       | 0.00       | 0.00                  | 0.00                 | 0.00                | 0.000   |                   |
| 3,252.00            | 3.00            | 295.00      | 3,251.93            | 1.66       | -3.56      | 2.00                  | 2.00                 | 0.00                | 295.000 |                   |
| 4,302.00            | 3.00            | 295.00      | 4,300.49            | 24.88      | -53.36     | 0.00                  | 0.00                 | 0.00                | 0.000   |                   |
| 4,452.00            | 0.00            | 0.00        | 4,450.42            | 26.54      | -56.92     | 2.00                  | -2.00                | 0.00                | 180.000 |                   |
| 7,203.58            | 0.00            | 0.00        | 7,202.00            | 26.54      | -56.92     | 0.00                  | 0.00                 | 0.00                | 0.000   |                   |
| 8,774.16            | 31.41           | 241.00      | 8,695.08            | -176.97    | -424.15    | 2.00                  | 2.00                 | 0.00                | 241.005 |                   |
| 11,328.54           | 31.41           | 241.00      | 10,875.11           | -822.30    | -1,588.58  | 0.00                  | 0.00                 | 0.00                | 0.000   |                   |
| 12,072.57           | 50.00           | 306.92      | 11,461.71           | -740.94    | -2,007.41  | 6.00                  | 2.50                 | 8.86                | 95.571  |                   |
| 12,648.02           | 91.00           | 329.85      | 11,651.99           | -337.86    | -2,346.56  | 8.00                  | 7.12                 | 3.98                | 32.765  |                   |
| 29,065.32           | 91.00           | 329.85      | 11,366.00           | 13,856.12  | -10,591.37 | 0.00                  | 0.00                 | 0.00                | 0.000   | Elmer N-14 HU BHL |



Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

| Planned Survey                 |                 |             |                     |            |            |                     |                    |              |               |  |
|--------------------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|--------------|---------------|--|
| Measured Depth (ft)            | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude     | Longitude     |  |
| 0.00                           | 0.00            | 0.00        | 0.00                | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 100.00                         | 0.00            | 0.00        | 100.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 200.00                         | 0.00            | 0.00        | 200.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 300.00                         | 0.00            | 0.00        | 300.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 400.00                         | 0.00            | 0.00        | 400.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 500.00                         | 0.00            | 0.00        | 500.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 600.00                         | 0.00            | 0.00        | 600.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 700.00                         | 0.00            | 0.00        | 700.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 800.00                         | 0.00            | 0.00        | 800.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 900.00                         | 0.00            | 0.00        | 900.00              | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,000.00                       | 0.00            | 0.00        | 1,000.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,100.00                       | 0.00            | 0.00        | 1,100.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,200.00                       | 0.00            | 0.00        | 1,200.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,300.00                       | 0.00            | 0.00        | 1,300.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,400.00                       | 0.00            | 0.00        | 1,400.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,500.00                       | 0.00            | 0.00        | 1,500.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,600.00                       | 0.00            | 0.00        | 1,600.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,700.00                       | 0.00            | 0.00        | 1,700.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,800.00                       | 0.00            | 0.00        | 1,800.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 1,900.00                       | 0.00            | 0.00        | 1,900.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,000.00                       | 0.00            | 0.00        | 2,000.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,100.00                       | 0.00            | 0.00        | 2,100.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,200.00                       | 0.00            | 0.00        | 2,200.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,300.00                       | 0.00            | 0.00        | 2,300.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,400.00                       | 0.00            | 0.00        | 2,400.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,500.00                       | 0.00            | 0.00        | 2,500.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,600.00                       | 0.00            | 0.00        | 2,600.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,700.00                       | 0.00            | 0.00        | 2,700.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,800.00                       | 0.00            | 0.00        | 2,800.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 2,900.00                       | 0.00            | 0.00        | 2,900.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 3,000.00                       | 0.00            | 0.00        | 3,000.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| 3,102.00                       | 0.00            | 0.00        | 3,102.00            | 0.00       | 0.00       | 14,415,399.175      | 1,714,229.095      | 39.693949920 | -80.737600020 |  |
| <b>KOP Begin 2°/100' build</b> |                 |             |                     |            |            |                     |                    |              |               |  |
| 3,200.00                       | 1.96            | 295.00      | 3,199.98            | 0.71       | -1.52      | 14,415,399.884      | 1,714,227.576      | 39.693951877 | -80.737605413 |  |
| 3,252.00                       | 3.00            | 295.00      | 3,251.93            | 1.66       | -3.56      | 14,415,400.834      | 1,714,225.537      | 39.693954505 | -80.737612652 |  |
| <b>Begin 3.00° tangent</b>     |                 |             |                     |            |            |                     |                    |              |               |  |
| 3,300.00                       | 3.00            | 295.00      | 3,299.87            | 2.72       | -5.84      | 14,415,401.896      | 1,714,223.260      | 39.693957439 | -80.737620735 |  |
| 3,400.00                       | 3.00            | 295.00      | 3,399.73            | 4.93       | -10.58     | 14,415,404.108      | 1,714,218.517      | 39.693963551 | -80.737637574 |  |
| 3,500.00                       | 3.00            | 295.00      | 3,499.59            | 7.14       | -15.32     | 14,415,406.320      | 1,714,213.774      | 39.693969664 | -80.737654413 |  |
| 3,600.00                       | 3.00            | 295.00      | 3,599.45            | 9.36       | -20.06     | 14,415,408.532      | 1,714,209.031      | 39.693975776 | -80.737671252 |  |
| 3,700.00                       | 3.00            | 295.00      | 3,699.32            | 11.57      | -24.81     | 14,415,410.743      | 1,714,204.288      | 39.693981889 | -80.737688090 |  |
| 3,800.00                       | 3.00            | 295.00      | 3,799.18            | 13.78      | -29.55     | 14,415,412.955      | 1,714,199.544      | 39.693988001 | -80.737704929 |  |
| 3,900.00                       | 3.00            | 295.00      | 3,899.04            | 15.99      | -34.29     | 14,415,415.167      | 1,714,194.801      | 39.693994113 | -80.737721768 |  |
| 4,000.00                       | 3.00            | 295.00      | 3,998.91            | 18.20      | -39.04     | 14,415,417.379      | 1,714,190.058      | 39.694000226 | -80.737738607 |  |
| 4,100.00                       | 3.00            | 295.00      | 4,098.77            | 20.42      | -43.78     | 14,415,419.591      | 1,714,185.315      | 39.694006338 | -80.737755446 |  |
| 4,200.00                       | 3.00            | 295.00      | 4,198.63            | 22.63      | -48.52     | 14,415,421.802      | 1,714,180.571      | 39.694012451 | -80.737772285 |  |
| 4,302.00                       | 3.00            | 295.00      | 4,300.49            | 24.88      | -53.36     | 14,415,424.058      | 1,714,175.733      | 39.694018685 | -80.737789460 |  |
| <b>Begin 2°/100' drop</b>      |                 |             |                     |            |            |                     |                    |              |               |  |
| 4,400.00                       | 1.04            | 295.00      | 4,398.43            | 26.34      | -56.49     | 14,415,425.518      | 1,714,172.603      | 39.694022719 | -80.737800574 |  |
| 4,452.00                       | 0.00            | 0.00        | 4,450.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |  |
| <b>Begin vertical hold</b>     |                 |             |                     |            |            |                     |                    |              |               |  |
| 4,500.00                       | 0.00            | 0.00        | 4,498.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |  |
| 4,600.00                       | 0.00            | 0.00        | 4,598.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |  |
| 4,700.00                       | 0.00            | 0.00        | 4,698.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |  |

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

**Planned Survey**

| Measured Depth (ft)         | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude     | Longitude     |
|-----------------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|--------------|---------------|
| 4,800.00                    | 0.00            | 0.00        | 4,798.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 4,900.00                    | 0.00            | 0.00        | 4,898.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,000.00                    | 0.00            | 0.00        | 4,998.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,100.00                    | 0.00            | 0.00        | 5,098.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,200.00                    | 0.00            | 0.00        | 5,198.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,300.00                    | 0.00            | 0.00        | 5,298.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,400.00                    | 0.00            | 0.00        | 5,398.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,500.00                    | 0.00            | 0.00        | 5,498.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,600.00                    | 0.00            | 0.00        | 5,598.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,700.00                    | 0.00            | 0.00        | 5,698.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,800.00                    | 0.00            | 0.00        | 5,798.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 5,900.00                    | 0.00            | 0.00        | 5,898.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,000.00                    | 0.00            | 0.00        | 5,998.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,100.00                    | 0.00            | 0.00        | 6,098.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,200.00                    | 0.00            | 0.00        | 6,198.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,300.00                    | 0.00            | 0.00        | 6,298.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,400.00                    | 0.00            | 0.00        | 6,398.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,500.00                    | 0.00            | 0.00        | 6,498.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,600.00                    | 0.00            | 0.00        | 6,598.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,700.00                    | 0.00            | 0.00        | 6,698.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,800.00                    | 0.00            | 0.00        | 6,798.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 6,900.00                    | 0.00            | 0.00        | 6,898.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 7,000.00                    | 0.00            | 0.00        | 6,998.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 7,100.00                    | 0.00            | 0.00        | 7,098.42            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| 7,203.58                    | 0.00            | 0.00        | 7,202.00            | 26.54      | -56.92     | 14,415,425.718      | 1,714,172.175      | 39.694023271 | -80.737802093 |
| <b>Begin 2°/100' build</b>  |                 |             |                     |            |            |                     |                    |              |               |
| 7,300.00                    | 1.93            | 241.00      | 7,298.41            | 25.76      | -58.34     | 14,415,424.931      | 1,714,170.756      | 39.694021122 | -80.737807146 |
| 7,400.00                    | 3.93            | 241.00      | 7,398.27            | 23.28      | -62.81     | 14,415,422.455      | 1,714,166.287      | 39.694014357 | -80.737823056 |
| 7,500.00                    | 5.93            | 241.00      | 7,497.90            | 19.12      | -70.32     | 14,415,418.291      | 1,714,158.773      | 39.694002981 | -80.737849811 |
| 7,600.00                    | 7.93            | 241.00      | 7,597.16            | 13.27      | -80.87     | 14,415,412.443      | 1,714,148.223      | 39.693987008 | -80.737887378 |
| 7,700.00                    | 9.93            | 241.00      | 7,695.94            | 5.75       | -94.45     | 14,415,404.921      | 1,714,134.649      | 39.693966457 | -80.737935711 |
| 7,800.00                    | 11.93           | 241.00      | 7,794.12            | -3.44      | -111.03    | 14,415,395.731      | 1,714,118.068      | 39.693941353 | -80.737994752 |
| 7,900.00                    | 13.93           | 241.00      | 7,891.58            | -14.29     | -130.60    | 14,415,384.887      | 1,714,098.499      | 39.693911727 | -80.738064428 |
| 8,000.00                    | 15.93           | 241.00      | 7,988.20            | -26.78     | -153.13    | 14,415,372.400      | 1,714,075.968      | 39.693877616 | -80.738144654 |
| 8,100.00                    | 17.93           | 241.00      | 8,083.87            | -40.89     | -178.59    | 14,415,358.286      | 1,714,050.501      | 39.693839059 | -80.738235333 |
| 8,200.00                    | 19.93           | 241.00      | 8,178.45            | -56.61     | -206.97    | 14,415,342.563      | 1,714,022.130      | 39.693796105 | -80.738336354 |
| 8,300.00                    | 21.93           | 241.00      | 8,271.85            | -73.93     | -238.21    | 14,415,325.249      | 1,713,990.888      | 39.693748806 | -80.738447594 |
| 8,400.00                    | 23.93           | 241.00      | 8,363.95            | -92.81     | -272.28    | 14,415,306.366      | 1,713,956.815      | 39.693697219 | -80.738568918 |
| 8,500.00                    | 25.93           | 241.00      | 8,454.63            | -113.24    | -309.14    | 14,415,285.936      | 1,713,919.951      | 39.693641407 | -80.738700177 |
| 8,600.00                    | 27.93           | 241.00      | 8,543.78            | -135.19    | -348.75    | 14,415,263.984      | 1,713,880.342      | 39.693581439 | -80.738841212 |
| 8,700.00                    | 29.93           | 241.00      | 8,631.30            | -158.64    | -391.06    | 14,415,240.538      | 1,713,838.035      | 39.693517386 | -80.738991850 |
| 8,774.16                    | 31.41           | 241.00      | 8,695.08            | -176.97    | -424.15    | 14,415,222.203      | 1,713,804.951      | 39.693467296 | -80.739109651 |
| <b>Begin 31.41° tangent</b> |                 |             |                     |            |            |                     |                    |              |               |
| 8,800.00                    | 31.41           | 241.00      | 8,717.13            | -183.50    | -435.93    | 14,415,215.674      | 1,713,793.170      | 39.693449459 | -80.739151600 |
| 8,900.00                    | 31.41           | 241.00      | 8,802.48            | -208.77    | -481.51    | 14,415,190.410      | 1,713,747.584      | 39.693380442 | -80.739313913 |
| 9,000.00                    | 31.41           | 241.00      | 8,887.82            | -234.03    | -527.10    | 14,415,165.147      | 1,713,701.998      | 39.693311424 | -80.739476226 |
| 9,100.00                    | 31.41           | 241.00      | 8,973.17            | -259.29    | -572.68    | 14,415,139.883      | 1,713,656.412      | 39.693242406 | -80.739638539 |
| 9,200.00                    | 31.41           | 241.00      | 9,058.51            | -284.56    | -618.27    | 14,415,114.620      | 1,713,610.827      | 39.693173388 | -80.739800851 |
| 9,300.00                    | 31.41           | 241.00      | 9,143.86            | -309.82    | -663.86    | 14,415,089.356      | 1,713,565.241      | 39.693104370 | -80.739963164 |
| 9,400.00                    | 31.41           | 241.00      | 9,229.20            | -335.08    | -709.44    | 14,415,064.093      | 1,713,519.655      | 39.693035351 | -80.740125475 |
| 9,500.00                    | 31.41           | 241.00      | 9,314.55            | -360.35    | -755.03    | 14,415,038.829      | 1,713,474.070      | 39.692966332 | -80.740287787 |
| 9,600.00                    | 31.41           | 241.00      | 9,399.89            | -385.61    | -800.61    | 14,415,013.566      | 1,713,428.484      | 39.692897313 | -80.740450098 |
| 9,700.00                    | 31.41           | 241.00      | 9,485.24            | -410.87    | -846.20    | 14,414,988.302      | 1,713,382.898      | 39.692828294 | -80.740612408 |
| 9,800.00                    | 31.41           | 241.00      | 9,570.58            | -436.14    | -891.78    | 14,414,963.039      | 1,713,337.313      | 39.692759274 | -80.740774719 |



Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Watzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

| Planned Survey                  |                 |             |                     |            |            |                     |                    |              |                |  |
|---------------------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|--------------|----------------|--|
| Measured Depth (ft)             | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude     | Longitude      |  |
| 9,900.00                        | 31.41           | 241.00      | 9,655.92            | -461.40    | -937.37    | 14,414,937.775      | 1,713,291.727      | 39.692690255 | -80.740937029  |  |
| 10,000.00                       | 31.41           | 241.00      | 9,741.27            | -486.66    | -982.96    | 14,414,912.512      | 1,713,246.141      | 39.692621235 | -80.741099339  |  |
| 10,100.00                       | 31.41           | 241.00      | 9,826.61            | -511.93    | -1,028.54  | 14,414,887.249      | 1,713,200.555      | 39.692552214 | -80.741261648  |  |
| 10,200.00                       | 31.41           | 241.00      | 9,911.96            | -537.19    | -1,074.13  | 14,414,861.985      | 1,713,154.970      | 39.692483194 | -80.741423958  |  |
| 10,300.00                       | 31.41           | 241.00      | 9,997.30            | -562.45    | -1,119.71  | 14,414,836.722      | 1,713,109.384      | 39.692414173 | -80.741586266  |  |
| 10,400.00                       | 31.41           | 241.00      | 10,082.65           | -587.72    | -1,165.30  | 14,414,811.458      | 1,713,063.798      | 39.692345152 | -80.741748575  |  |
| 10,500.00                       | 31.41           | 241.00      | 10,167.99           | -612.98    | -1,210.89  | 14,414,786.195      | 1,713,018.213      | 39.692276131 | -80.741910883  |  |
| 10,600.00                       | 31.41           | 241.00      | 10,253.34           | -638.25    | -1,256.47  | 14,414,760.931      | 1,712,972.627      | 39.692207110 | -80.742073191  |  |
| 10,700.00                       | 31.41           | 241.00      | 10,338.68           | -663.51    | -1,302.06  | 14,414,735.668      | 1,712,927.041      | 39.692138088 | -80.742235499  |  |
| 10,800.00                       | 31.41           | 241.00      | 10,424.02           | -688.77    | -1,347.64  | 14,414,710.404      | 1,712,881.456      | 39.692069067 | -80.742397806  |  |
| 10,900.00                       | 31.41           | 241.00      | 10,509.37           | -714.04    | -1,393.23  | 14,414,685.141      | 1,712,835.870      | 39.692000045 | -80.742560113  |  |
| 11,000.00                       | 31.41           | 241.00      | 10,594.71           | -739.30    | -1,438.81  | 14,414,659.877      | 1,712,790.284      | 39.691931022 | -80.742722420  |  |
| 11,100.00                       | 31.41           | 241.00      | 10,680.06           | -764.56    | -1,484.40  | 14,414,634.614      | 1,712,744.698      | 39.691862000 | -80.742884726  |  |
| 11,200.00                       | 31.41           | 241.00      | 10,765.40           | -789.83    | -1,529.99  | 14,414,609.350      | 1,712,699.113      | 39.691792977 | -80.743047032  |  |
| 11,300.00                       | 31.41           | 241.00      | 10,850.75           | -815.09    | -1,575.57  | 14,414,584.087      | 1,712,653.527      | 39.691723954 | -80.743209338  |  |
| 11,328.54                       | 31.41           | 241.00      | 10,875.11           | -822.30    | -1,588.58  | 14,414,576.875      | 1,712,640.515      | 39.691704252 | -80.743255667  |  |
| <b>Begin 6°/100' build/turn</b> |                 |             |                     |            |            |                     |                    |              |                |  |
| 11,350.00                       | 31.31           | 243.47      | 10,893.43           | -827.50    | -1,598.46  | 14,414,571.675      | 1,712,630.636      | 39.691690047 | -80.743290837  |  |
| 11,400.00                       | 31.26           | 249.25      | 10,936.17           | -837.90    | -1,622.22  | 14,414,561.274      | 1,712,606.876      | 39.691661669 | -80.743375405  |  |
| 11,450.00                       | 31.46           | 255.00      | 10,978.88           | -845.88    | -1,646.96  | 14,414,553.299      | 1,712,582.135      | 39.691639961 | -80.743463435  |  |
| 11,500.00                       | 31.92           | 260.65      | 11,021.43           | -851.40    | -1,672.62  | 14,414,547.772      | 1,712,556.481      | 39.691624985 | -80.743554686  |  |
| 11,550.00                       | 32.62           | 266.11      | 11,063.71           | -854.47    | -1,699.11  | 14,414,544.709      | 1,712,529.985      | 39.691616780 | -80.743648908  |  |
| 11,600.00                       | 33.55           | 271.34      | 11,105.61           | -855.06    | -1,726.38  | 14,414,544.117      | 1,712,502.718      | 39.691615370 | -80.743745842  |  |
| 11,650.00                       | 34.69           | 276.29      | 11,147.01           | -853.18    | -1,754.34  | 14,414,545.999      | 1,712,474.755      | 39.691620757 | -80.743845224  |  |
| 11,700.00                       | 36.01           | 280.94      | 11,187.80           | -848.83    | -1,782.92  | 14,414,550.349      | 1,712,446.174      | 39.691632928 | -80.743946779  |  |
| 11,750.00                       | 37.51           | 285.29      | 11,227.86           | -842.02    | -1,812.05  | 14,414,557.156      | 1,712,417.053      | 39.691651849 | -80.744050231  |  |
| 11,800.00                       | 39.15           | 289.34      | 11,267.09           | -832.78    | -1,841.63  | 14,414,566.400      | 1,712,387.471      | 39.691677469 | -80.744155296  |  |
| 11,850.00                       | 40.92           | 293.11      | 11,305.38           | -821.12    | -1,871.59  | 14,414,578.057      | 1,712,357.509      | 39.691709716 | -80.744261685  |  |
| 11,900.00                       | 42.81           | 296.60      | 11,342.62           | -807.08    | -1,901.85  | 14,414,592.094      | 1,712,327.250      | 39.691748502 | -80.744369108  |  |
| 11,950.00                       | 44.79           | 299.85      | 11,378.71           | -790.70    | -1,932.32  | 14,414,608.472      | 1,712,296.777      | 39.691793722 | -80.744477269  |  |
| 12,000.00                       | 46.86           | 302.88      | 11,413.55           | -772.03    | -1,962.93  | 14,414,627.148      | 1,712,266.173      | 39.691845251 | -80.744585873  |  |
| 12,050.00                       | 49.01           | 305.70      | 11,447.05           | -751.11    | -1,993.56  | 14,414,648.070      | 1,712,235.521      | 39.691902948 | -80.744684621  |  |
| 12,072.57                       | 50.00           | 306.92      | 11,461.71           | -740.94    | -2,007.41  | 14,414,658.237      | 1,712,221.690      | 39.691930978 | -80.7447473688 |  |
| <b>Begin 8°/100' build/turn</b> |                 |             |                     |            |            |                     |                    |              |                |  |
| 12,100.00                       | 51.85           | 308.43      | 11,479.00           | -727.93    | -2,024.26  | 14,414,671.251      | 1,712,204.841      | 39.691966852 | -80.744803449  |  |
| 12,150.00                       | 55.28           | 310.99      | 11,508.69           | -702.21    | -2,055.18  | 14,414,696.962      | 1,712,173.917      | 39.692037703 | -80.744913121  |  |
| 12,200.00                       | 58.76           | 313.35      | 11,535.90           | -674.05    | -2,086.25  | 14,414,725.127      | 1,712,142.851      | 39.692115294 | -80.745023269  |  |
| 12,250.00                       | 62.28           | 315.54      | 11,560.51           | -643.57    | -2,117.30  | 14,414,755.608      | 1,712,111.796      | 39.692199248 | -80.745133355  |  |
| 12,300.00                       | 65.83           | 317.59      | 11,582.39           | -610.92    | -2,148.20  | 14,414,788.257      | 1,712,080.903      | 39.692289154 | -80.745242845  |  |
| 12,350.00                       | 69.40           | 319.53      | 11,601.43           | -576.26    | -2,178.78  | 14,414,822.916      | 1,712,050.323      | 39.692384576 | -80.745351204  |  |
| 12,400.00                       | 73.00           | 321.39      | 11,617.54           | -539.76    | -2,208.90  | 14,414,859.415      | 1,712,020.204      | 39.692485049 | -80.745457905  |  |
| 12,450.00                       | 76.61           | 323.17      | 11,630.65           | -501.60    | -2,238.41  | 14,414,897.577      | 1,711,990.693      | 39.692590082 | -80.745562428  |  |
| 12,500.00                       | 80.23           | 324.90      | 11,640.68           | -461.96    | -2,267.17  | 14,414,937.215      | 1,711,961.933      | 39.692699165 | -80.745664263  |  |
| 12,550.00                       | 83.86           | 326.59      | 11,647.60           | -421.04    | -2,295.03  | 14,414,978.136      | 1,711,934.066      | 39.692811765 | -80.745762914  |  |
| 12,600.00                       | 87.50           | 328.26      | 11,651.36           | -379.03    | -2,321.87  | 14,415,020.142      | 1,711,907.227      | 39.692927334 | -80.745857901  |  |
| 12,648.02                       | 91.00           | 329.85      | 11,651.99           | -337.86    | -2,346.56  | 14,415,061.313      | 1,711,882.541      | 39.693040594 | -80.745945243  |  |
| <b>Begin 91.00° lateral</b>     |                 |             |                     |            |            |                     |                    |              |                |  |
| 12,700.00                       | 91.00           | 329.85      | 11,651.08           | -292.92    | -2,372.67  | 14,415,106.255      | 1,711,856.435      | 39.693164223 | -80.746037593  |  |
| 12,800.00                       | 91.00           | 329.85      | 11,649.34           | -206.46    | -2,422.89  | 14,415,192.712      | 1,711,806.215      | 39.693402051 | -80.746215250  |  |
| 12,900.00                       | 91.00           | 329.85      | 11,647.60           | -120.01    | -2,473.11  | 14,415,279.169      | 1,711,755.995      | 39.693639880 | -80.746392909  |  |
| 13,000.00                       | 91.00           | 329.85      | 11,645.86           | -33.55     | -2,523.33  | 14,415,365.627      | 1,711,705.775      | 39.693877709 | -80.746570569  |  |
| 13,100.00                       | 91.00           | 329.85      | 11,644.12           | 52.91      | -2,573.55  | 14,415,452.084      | 1,711,655.555      | 39.694115537 | -80.746748230  |  |
| 13,200.00                       | 91.00           | 329.85      | 11,642.37           | 139.37     | -2,623.77  | 14,415,538.541      | 1,711,605.334      | 39.694353365 | -80.746925892  |  |
| 13,300.00                       | 91.00           | 329.85      | 11,640.63           | 225.82     | -2,673.99  | 14,415,624.999      | 1,711,555.114      | 39.694591192 | -80.747103555  |  |



Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude     | Longitude     |
|---------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|--------------|---------------|
| 13,400.00           | 91.00           | 329.85      | 11,638.89           | 312.28     | -2,724.21  | 14,415,711.456      | 1,711,504.894      | 39.694829019 | -80.747281220 |
| 13,500.00           | 91.00           | 329.85      | 11,637.15           | 398.74     | -2,774.43  | 14,415,797.913      | 1,711,454.674      | 39.695066847 | -80.747458886 |
| 13,600.00           | 91.00           | 329.85      | 11,635.41           | 485.20     | -2,824.65  | 14,415,884.370      | 1,711,404.454      | 39.695304673 | -80.747636553 |
| 13,700.00           | 91.00           | 329.85      | 11,633.66           | 571.65     | -2,874.87  | 14,415,970.828      | 1,711,354.234      | 39.695542500 | -80.747814221 |
| 13,800.00           | 91.00           | 329.85      | 11,631.92           | 658.11     | -2,925.09  | 14,416,057.285      | 1,711,304.013      | 39.695780326 | -80.747991891 |
| 13,900.00           | 91.00           | 329.85      | 11,630.18           | 744.57     | -2,975.31  | 14,416,143.742      | 1,711,253.793      | 39.696018152 | -80.748169562 |
| 14,000.00           | 91.00           | 329.85      | 11,628.44           | 831.03     | -3,025.53  | 14,416,230.199      | 1,711,203.573      | 39.696255977 | -80.748347234 |
| 14,100.00           | 91.00           | 329.85      | 11,626.70           | 917.48     | -3,075.75  | 14,416,316.657      | 1,711,153.353      | 39.696493803 | -80.748524907 |
| 14,200.00           | 91.00           | 329.85      | 11,624.95           | 1,003.94   | -3,125.97  | 14,416,403.114      | 1,711,103.133      | 39.696731628 | -80.748702581 |
| 14,300.00           | 91.00           | 329.85      | 11,623.21           | 1,090.40   | -3,176.19  | 14,416,489.571      | 1,711,052.913      | 39.696969453 | -80.748880257 |
| 14,400.00           | 91.00           | 329.85      | 11,621.47           | 1,176.86   | -3,226.41  | 14,416,576.028      | 1,711,002.692      | 39.697207277 | -80.749057934 |
| 14,500.00           | 91.00           | 329.85      | 11,619.73           | 1,263.31   | -3,276.63  | 14,416,662.486      | 1,710,952.472      | 39.697445101 | -80.749235612 |
| 14,600.00           | 91.00           | 329.85      | 11,617.99           | 1,349.77   | -3,326.85  | 14,416,748.943      | 1,710,902.252      | 39.697682925 | -80.749413291 |
| 14,700.00           | 91.00           | 329.85      | 11,616.24           | 1,436.23   | -3,377.07  | 14,416,835.400      | 1,710,852.032      | 39.697920749 | -80.749590972 |
| 14,800.00           | 91.00           | 329.85      | 11,614.50           | 1,522.69   | -3,427.29  | 14,416,921.858      | 1,710,801.812      | 39.698158573 | -80.749768653 |
| 14,900.00           | 91.00           | 329.85      | 11,612.76           | 1,609.14   | -3,477.51  | 14,417,008.315      | 1,710,751.592      | 39.698396396 | -80.749946336 |
| 15,000.00           | 91.00           | 329.85      | 11,611.02           | 1,695.60   | -3,527.73  | 14,417,094.772      | 1,710,701.371      | 39.698634219 | -80.750124020 |
| 15,100.00           | 91.00           | 329.85      | 11,609.28           | 1,782.06   | -3,577.95  | 14,417,181.229      | 1,710,651.151      | 39.698872041 | -80.750301706 |
| 15,200.00           | 91.00           | 329.85      | 11,607.53           | 1,868.52   | -3,628.17  | 14,417,267.687      | 1,710,600.931      | 39.699109863 | -80.750479392 |
| 15,300.00           | 91.00           | 329.85      | 11,605.79           | 1,954.97   | -3,678.39  | 14,417,354.144      | 1,710,550.711      | 39.699347685 | -80.750657080 |
| 15,400.00           | 91.00           | 329.85      | 11,604.05           | 2,041.43   | -3,728.61  | 14,417,440.601      | 1,710,500.491      | 39.699585507 | -80.750834769 |
| 15,500.00           | 91.00           | 329.85      | 11,602.31           | 2,127.89   | -3,778.83  | 14,417,527.058      | 1,710,450.271      | 39.699823329 | -80.751012459 |
| 15,600.00           | 91.00           | 329.85      | 11,600.57           | 2,214.35   | -3,829.05  | 14,417,613.516      | 1,710,400.050      | 39.700061150 | -80.751190151 |
| 15,700.00           | 91.00           | 329.85      | 11,598.82           | 2,300.80   | -3,879.27  | 14,417,699.973      | 1,710,349.830      | 39.700298971 | -80.751367843 |
| 15,800.00           | 91.00           | 329.85      | 11,597.08           | 2,387.26   | -3,929.49  | 14,417,786.430      | 1,710,299.610      | 39.700536791 | -80.751545537 |
| 15,900.00           | 91.00           | 329.85      | 11,595.34           | 2,473.72   | -3,979.71  | 14,417,872.888      | 1,710,249.390      | 39.700774612 | -80.751723232 |
| 16,000.00           | 91.00           | 329.85      | 11,593.60           | 2,560.17   | -4,029.93  | 14,417,959.345      | 1,710,199.170      | 39.701012432 | -80.751900929 |
| 16,100.00           | 91.00           | 329.85      | 11,591.86           | 2,646.63   | -4,080.15  | 14,418,045.802      | 1,710,148.950      | 39.701250252 | -80.752078626 |
| 16,200.00           | 91.00           | 329.85      | 11,590.11           | 2,733.09   | -4,130.37  | 14,418,132.259      | 1,710,098.730      | 39.701488071 | -80.752256325 |
| 16,300.00           | 91.00           | 329.85      | 11,588.37           | 2,819.55   | -4,180.59  | 14,418,218.717      | 1,710,048.509      | 39.701725890 | -80.752434025 |
| 16,400.00           | 91.00           | 329.85      | 11,586.63           | 2,906.00   | -4,230.82  | 14,418,305.174      | 1,709,998.289      | 39.701963709 | -80.752611726 |
| 16,500.00           | 91.00           | 329.85      | 11,584.89           | 2,992.46   | -4,281.04  | 14,418,391.631      | 1,709,948.069      | 39.702201528 | -80.752789429 |
| 16,600.00           | 91.00           | 329.85      | 11,583.15           | 3,078.92   | -4,331.26  | 14,418,478.088      | 1,709,897.849      | 39.702439347 | -80.752967132 |
| 16,700.00           | 91.00           | 329.85      | 11,581.40           | 3,165.38   | -4,381.48  | 14,418,564.546      | 1,709,847.629      | 39.702677165 | -80.753144837 |
| 16,800.00           | 91.00           | 329.85      | 11,579.66           | 3,251.83   | -4,431.70  | 14,418,651.003      | 1,709,797.409      | 39.702914983 | -80.753322543 |
| 16,900.00           | 91.00           | 329.85      | 11,577.92           | 3,338.29   | -4,481.92  | 14,418,737.460      | 1,709,747.188      | 39.703152800 | -80.753500250 |
| 17,000.00           | 91.00           | 329.85      | 11,576.18           | 3,424.75   | -4,532.14  | 14,418,823.918      | 1,709,696.968      | 39.703390617 | -80.753677959 |
| 17,100.00           | 91.00           | 329.85      | 11,574.44           | 3,511.21   | -4,582.36  | 14,418,910.375      | 1,709,646.748      | 39.703628434 | -80.753855669 |
| 17,200.00           | 91.00           | 329.85      | 11,572.69           | 3,597.66   | -4,632.58  | 14,418,996.832      | 1,709,596.528      | 39.703866251 | -80.754033379 |
| 17,300.00           | 91.00           | 329.85      | 11,570.95           | 3,684.12   | -4,682.80  | 14,419,083.289      | 1,709,546.308      | 39.704104068 | -80.754211092 |
| 17,400.00           | 91.00           | 329.85      | 11,569.21           | 3,770.58   | -4,733.02  | 14,419,169.747      | 1,709,496.088      | 39.704341884 | -80.754388805 |
| 17,500.00           | 91.00           | 329.85      | 11,567.47           | 3,857.04   | -4,783.24  | 14,419,256.204      | 1,709,445.867      | 39.704579700 | -80.754566520 |
| 17,600.00           | 91.00           | 329.85      | 11,565.73           | 3,943.49   | -4,833.46  | 14,419,342.661      | 1,709,395.647      | 39.704817515 | -80.754744235 |
| 17,700.00           | 91.00           | 329.85      | 11,563.98           | 4,029.95   | -4,883.68  | 14,419,429.118      | 1,709,345.427      | 39.705055331 | -80.754921952 |
| 17,800.00           | 91.00           | 329.85      | 11,562.24           | 4,116.41   | -4,933.90  | 14,419,515.576      | 1,709,295.207      | 39.705293146 | -80.755099671 |
| 17,900.00           | 91.00           | 329.85      | 11,560.50           | 4,202.87   | -4,984.12  | 14,419,602.033      | 1,709,244.987      | 39.705530961 | -80.755277390 |
| 18,000.00           | 91.00           | 329.85      | 11,558.76           | 4,289.32   | -5,034.34  | 14,419,688.490      | 1,709,194.767      | 39.705768775 | -80.755455111 |
| 18,100.00           | 91.00           | 329.85      | 11,557.02           | 4,375.78   | -5,084.56  | 14,419,774.948      | 1,709,144.546      | 39.706006589 | -80.755632833 |
| 18,200.00           | 91.00           | 329.85      | 11,555.27           | 4,462.24   | -5,134.78  | 14,419,861.405      | 1,709,094.326      | 39.706244403 | -80.755810556 |
| 18,300.00           | 91.00           | 329.85      | 11,553.53           | 4,548.70   | -5,185.00  | 14,419,947.862      | 1,709,044.106      | 39.706482217 | -80.755988280 |
| 18,400.00           | 91.00           | 329.85      | 11,551.79           | 4,635.15   | -5,235.22  | 14,420,034.319      | 1,708,993.886      | 39.706720030 | -80.756166005 |
| 18,500.00           | 91.00           | 329.85      | 11,550.05           | 4,721.61   | -5,285.44  | 14,420,120.777      | 1,708,943.666      | 39.706957844 | -80.756343732 |
| 18,600.00           | 91.00           | 329.85      | 11,548.31           | 4,808.07   | -5,335.66  | 14,420,207.234      | 1,708,893.446      | 39.707195656 | -80.756521460 |
| 18,700.00           | 91.00           | 329.85      | 11,546.56           | 4,894.53   | -5,385.88  | 14,420,293.691      | 1,708,843.225      | 39.707433469 | -80.756699189 |
| 18,800.00           | 91.00           | 329.85      | 11,544.82           | 4,980.98   | -5,436.10  | 14,420,380.148      | 1,708,793.005      | 39.707671281 | -80.756876920 |



Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude     | Longitude     |
|---------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|--------------|---------------|
| 18,900.00           | 91.00           | 329.85      | 11,543.08           | 5,067.44   | -5,486.32  | 14,420,466.606      | 1,708,742.785      | 39.707909093 | -80.757054651 |
| 19,000.00           | 91.00           | 329.85      | 11,541.34           | 5,153.90   | -5,536.54  | 14,420,553.063      | 1,708,692.565      | 39.708146905 | -80.757232384 |
| 19,100.00           | 91.00           | 329.85      | 11,539.60           | 5,240.36   | -5,586.76  | 14,420,639.520      | 1,708,642.345      | 39.708384717 | -80.757410118 |
| 19,200.00           | 91.00           | 329.85      | 11,537.85           | 5,326.81   | -5,636.98  | 14,420,725.977      | 1,708,592.125      | 39.708622528 | -80.757587854 |
| 19,300.00           | 91.00           | 329.85      | 11,536.11           | 5,413.27   | -5,687.20  | 14,420,812.435      | 1,708,541.904      | 39.708860339 | -80.757765590 |
| 19,400.00           | 91.00           | 329.85      | 11,534.37           | 5,499.73   | -5,737.42  | 14,420,898.892      | 1,708,491.684      | 39.709098149 | -80.757943328 |
| 19,500.00           | 91.00           | 329.85      | 11,532.63           | 5,586.19   | -5,787.64  | 14,420,985.349      | 1,708,441.464      | 39.709335960 | -80.758121067 |
| 19,600.00           | 91.00           | 329.85      | 11,530.89           | 5,672.64   | -5,837.86  | 14,421,071.807      | 1,708,391.244      | 39.709573770 | -80.758298807 |
| 19,700.00           | 91.00           | 329.85      | 11,529.14           | 5,759.10   | -5,888.08  | 14,421,158.264      | 1,708,341.024      | 39.709811579 | -80.758476548 |
| 19,800.00           | 91.00           | 329.85      | 11,527.40           | 5,845.56   | -5,938.30  | 14,421,244.721      | 1,708,290.804      | 39.710049389 | -80.758654291 |
| 19,900.00           | 91.00           | 329.85      | 11,525.66           | 5,932.02   | -5,988.52  | 14,421,331.178      | 1,708,240.583      | 39.710287198 | -80.758832035 |
| 20,000.00           | 91.00           | 329.85      | 11,523.92           | 6,018.47   | -6,038.74  | 14,421,417.636      | 1,708,190.363      | 39.710525007 | -80.759009780 |
| 20,100.00           | 91.00           | 329.85      | 11,522.18           | 6,104.93   | -6,088.96  | 14,421,504.093      | 1,708,140.143      | 39.710762816 | -80.759187526 |
| 20,200.00           | 91.00           | 329.85      | 11,520.43           | 6,191.39   | -6,139.19  | 14,421,590.550      | 1,708,089.923      | 39.711000624 | -80.759365273 |
| 20,300.00           | 91.00           | 329.85      | 11,518.69           | 6,277.85   | -6,189.41  | 14,421,677.007      | 1,708,039.703      | 39.711238432 | -80.759543022 |
| 20,400.00           | 91.00           | 329.85      | 11,516.95           | 6,364.30   | -6,239.63  | 14,421,763.465      | 1,707,989.483      | 39.711476240 | -80.759720772 |
| 20,500.00           | 91.00           | 329.85      | 11,515.21           | 6,450.76   | -6,289.85  | 14,421,849.922      | 1,707,939.262      | 39.711714048 | -80.759898523 |
| 20,600.00           | 91.00           | 329.85      | 11,513.47           | 6,537.22   | -6,340.07  | 14,421,936.379      | 1,707,889.042      | 39.711951855 | -80.760076275 |
| 20,700.00           | 91.00           | 329.85      | 11,511.72           | 6,623.68   | -6,390.29  | 14,422,022.837      | 1,707,838.822      | 39.712189662 | -80.760254029 |
| 20,800.00           | 91.00           | 329.85      | 11,509.98           | 6,710.13   | -6,440.51  | 14,422,109.294      | 1,707,788.602      | 39.712427469 | -80.760431783 |
| 20,900.00           | 91.00           | 329.85      | 11,508.24           | 6,796.59   | -6,490.73  | 14,422,195.751      | 1,707,738.382      | 39.712665275 | -80.760609539 |
| 21,000.00           | 91.00           | 329.85      | 11,506.50           | 6,883.05   | -6,540.95  | 14,422,282.208      | 1,707,688.162      | 39.712903081 | -80.760787297 |
| 21,100.00           | 91.00           | 329.85      | 11,504.76           | 6,969.50   | -6,591.17  | 14,422,368.666      | 1,707,637.941      | 39.713140887 | -80.760965055 |
| 21,200.00           | 91.00           | 329.85      | 11,503.01           | 7,055.96   | -6,641.39  | 14,422,455.123      | 1,707,587.721      | 39.713378693 | -80.761142815 |
| 21,300.00           | 91.00           | 329.85      | 11,501.27           | 7,142.42   | -6,691.61  | 14,422,541.580      | 1,707,537.501      | 39.713616498 | -80.761320576 |
| 21,400.00           | 91.00           | 329.85      | 11,499.53           | 7,228.88   | -6,741.83  | 14,422,628.037      | 1,707,487.281      | 39.713854303 | -80.761498338 |
| 21,500.00           | 91.00           | 329.85      | 11,497.79           | 7,315.33   | -6,792.05  | 14,422,714.495      | 1,707,437.061      | 39.714092108 | -80.761676101 |
| 21,600.00           | 91.00           | 329.85      | 11,496.05           | 7,401.79   | -6,842.27  | 14,422,800.952      | 1,707,386.841      | 39.714329913 | -80.761853865 |
| 21,700.00           | 91.00           | 329.85      | 11,494.30           | 7,488.25   | -6,892.49  | 14,422,887.409      | 1,707,336.621      | 39.714567717 | -80.762031631 |
| 21,800.00           | 91.00           | 329.85      | 11,492.56           | 7,574.71   | -6,942.71  | 14,422,973.867      | 1,707,286.400      | 39.714805521 | -80.762209398 |
| 21,900.00           | 91.00           | 329.85      | 11,490.82           | 7,661.16   | -6,992.93  | 14,423,060.324      | 1,707,236.180      | 39.715043325 | -80.762387166 |
| 22,000.00           | 91.00           | 329.85      | 11,489.08           | 7,747.62   | -7,043.15  | 14,423,146.781      | 1,707,185.960      | 39.715281128 | -80.762564936 |
| 22,100.00           | 91.00           | 329.85      | 11,487.34           | 7,834.08   | -7,093.37  | 14,423,233.238      | 1,707,135.740      | 39.715518931 | -80.762742706 |
| 22,200.00           | 91.00           | 329.85      | 11,485.59           | 7,920.54   | -7,143.59  | 14,423,319.696      | 1,707,085.520      | 39.715756734 | -80.762920478 |
| 22,300.00           | 91.00           | 329.85      | 11,483.85           | 8,006.99   | -7,193.81  | 14,423,406.153      | 1,707,035.300      | 39.715994536 | -80.763098251 |
| 22,400.00           | 91.00           | 329.85      | 11,482.11           | 8,093.45   | -7,244.03  | 14,423,492.610      | 1,706,985.079      | 39.716232339 | -80.763276025 |
| 22,500.00           | 91.00           | 329.85      | 11,480.37           | 8,179.91   | -7,294.25  | 14,423,579.067      | 1,706,934.859      | 39.716470141 | -80.763453801 |
| 22,600.00           | 91.00           | 329.85      | 11,478.63           | 8,266.37   | -7,344.47  | 14,423,665.525      | 1,706,884.639      | 39.716707942 | -80.763631577 |
| 22,700.00           | 91.00           | 329.85      | 11,476.88           | 8,352.82   | -7,394.69  | 14,423,751.982      | 1,706,834.419      | 39.716945744 | -80.763809355 |
| 22,800.00           | 91.00           | 329.85      | 11,475.14           | 8,439.28   | -7,444.91  | 14,423,838.439      | 1,706,784.199      | 39.717183545 | -80.763987134 |
| 22,900.00           | 91.00           | 329.85      | 11,473.40           | 8,525.74   | -7,495.13  | 14,423,924.896      | 1,706,733.979      | 39.717421346 | -80.764164915 |
| 23,000.00           | 91.00           | 329.85      | 11,471.66           | 8,612.20   | -7,545.35  | 14,424,011.354      | 1,706,683.758      | 39.717659147 | -80.764342696 |
| 23,100.00           | 91.00           | 329.85      | 11,469.92           | 8,698.65   | -7,595.57  | 14,424,097.811      | 1,706,633.538      | 39.717896947 | -80.764520479 |
| 23,200.00           | 91.00           | 329.85      | 11,468.17           | 8,785.11   | -7,645.79  | 14,424,184.268      | 1,706,583.318      | 39.718134747 | -80.764698263 |
| 23,300.00           | 91.00           | 329.85      | 11,466.43           | 8,871.57   | -7,696.01  | 14,424,270.726      | 1,706,533.098      | 39.718372547 | -80.764876048 |
| 23,400.00           | 91.00           | 329.85      | 11,464.69           | 8,958.03   | -7,746.23  | 14,424,357.183      | 1,706,482.878      | 39.718610346 | -80.765053835 |
| 23,500.00           | 91.00           | 329.85      | 11,462.95           | 9,044.48   | -7,796.45  | 14,424,443.640      | 1,706,432.658      | 39.718848145 | -80.765231622 |
| 23,600.00           | 91.00           | 329.85      | 11,461.21           | 9,130.94   | -7,846.67  | 14,424,530.097      | 1,706,382.437      | 39.719085944 | -80.765409411 |
| 23,700.00           | 91.00           | 329.85      | 11,459.46           | 9,217.40   | -7,896.89  | 14,424,616.555      | 1,706,332.217      | 39.719323743 | -80.765587201 |
| 23,800.00           | 91.00           | 329.85      | 11,457.72           | 9,303.86   | -7,947.11  | 14,424,703.012      | 1,706,281.997      | 39.719561541 | -80.765764993 |
| 23,900.00           | 91.00           | 329.85      | 11,455.98           | 9,390.31   | -7,997.34  | 14,424,789.469      | 1,706,231.777      | 39.719799340 | -80.765942785 |
| 24,000.00           | 91.00           | 329.85      | 11,454.24           | 9,476.77   | -8,047.56  | 14,424,875.926      | 1,706,181.557      | 39.720037137 | -80.766120579 |
| 24,100.00           | 91.00           | 329.85      | 11,452.50           | 9,563.23   | -8,097.78  | 14,424,962.384      | 1,706,131.337      | 39.720274935 | -80.766298374 |
| 24,200.00           | 91.00           | 329.85      | 11,450.75           | 9,649.69   | -8,148.00  | 14,425,048.841      | 1,706,081.116      | 39.720512732 | -80.766476170 |
| 24,300.00           | 91.00           | 329.85      | 11,449.01           | 9,736.14   | -8,198.22  | 14,425,135.298      | 1,706,030.896      | 39.720750529 | -80.766653967 |



Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (usft) | Map Easting (usft) | Latitude     | Longitude     |
|---------------------|-----------------|-------------|---------------------|------------|------------|---------------------|--------------------|--------------|---------------|
| 24,400.00           | 91.00           | 329.85      | 11,447.27           | 9,822.60   | -8,248.44  | 14,425,221.756      | 1,705,980.676      | 39.720988326 | -80.766831766 |
| 24,500.00           | 91.00           | 329.85      | 11,445.53           | 9,909.06   | -8,298.66  | 14,425,308.213      | 1,705,930.456      | 39.721226122 | -80.767009566 |
| 24,600.00           | 91.00           | 329.85      | 11,443.79           | 9,995.52   | -8,348.88  | 14,425,394.670      | 1,705,880.236      | 39.721463918 | -80.767187367 |
| 24,700.00           | 91.00           | 329.85      | 11,442.04           | 10,081.97  | -8,399.10  | 14,425,481.127      | 1,705,830.016      | 39.721701714 | -80.767365169 |
| 24,800.00           | 91.00           | 329.85      | 11,440.30           | 10,168.43  | -8,449.32  | 14,425,567.585      | 1,705,779.795      | 39.721939510 | -80.767542973 |
| 24,900.00           | 91.00           | 329.85      | 11,438.56           | 10,254.89  | -8,499.54  | 14,425,654.042      | 1,705,729.575      | 39.722177305 | -80.767720777 |
| 25,000.00           | 91.00           | 329.85      | 11,436.82           | 10,341.35  | -8,549.76  | 14,425,740.499      | 1,705,679.355      | 39.722415100 | -80.767898583 |
| 25,100.00           | 91.00           | 329.85      | 11,435.08           | 10,427.80  | -8,599.98  | 14,425,826.956      | 1,705,629.135      | 39.722652895 | -80.768076390 |
| 25,200.00           | 91.00           | 329.85      | 11,433.33           | 10,514.26  | -8,650.20  | 14,425,913.414      | 1,705,578.915      | 39.722890690 | -80.768254199 |
| 25,300.00           | 91.00           | 329.85      | 11,431.59           | 10,600.72  | -8,700.42  | 14,425,999.871      | 1,705,528.695      | 39.723128484 | -80.768432008 |
| 25,400.00           | 91.00           | 329.85      | 11,429.85           | 10,687.18  | -8,750.64  | 14,426,086.328      | 1,705,478.474      | 39.723366278 | -80.768609819 |
| 25,500.00           | 91.00           | 329.85      | 11,428.11           | 10,773.63  | -8,800.86  | 14,426,172.786      | 1,705,428.254      | 39.723604071 | -80.768787631 |
| 25,600.00           | 91.00           | 329.85      | 11,426.37           | 10,860.09  | -8,851.08  | 14,426,259.243      | 1,705,378.034      | 39.723841865 | -80.768965444 |
| 25,700.00           | 91.00           | 329.85      | 11,424.62           | 10,946.55  | -8,901.30  | 14,426,345.700      | 1,705,327.814      | 39.724079658 | -80.769143259 |
| 25,800.00           | 91.00           | 329.85      | 11,422.88           | 11,033.00  | -8,951.52  | 14,426,432.157      | 1,705,277.594      | 39.724317451 | -80.769321075 |
| 25,900.00           | 91.00           | 329.85      | 11,421.14           | 11,119.46  | -9,001.74  | 14,426,518.615      | 1,705,227.374      | 39.724555243 | -80.769498891 |
| 26,000.00           | 91.00           | 329.85      | 11,419.40           | 11,205.92  | -9,051.96  | 14,426,605.072      | 1,705,177.153      | 39.724793035 | -80.769676710 |
| 26,100.00           | 91.00           | 329.85      | 11,417.66           | 11,292.38  | -9,102.18  | 14,426,691.529      | 1,705,126.933      | 39.725030826 | -80.769854529 |
| 26,200.00           | 91.00           | 329.85      | 11,415.91           | 11,378.83  | -9,152.40  | 14,426,777.986      | 1,705,076.713      | 39.725268618 | -80.770032349 |
| 26,300.00           | 91.00           | 329.85      | 11,414.17           | 11,465.29  | -9,202.62  | 14,426,864.444      | 1,705,026.493      | 39.725506410 | -80.770210171 |
| 26,400.00           | 91.00           | 329.85      | 11,412.43           | 11,551.75  | -9,252.84  | 14,426,950.901      | 1,704,976.273      | 39.725744201 | -80.770387994 |
| 26,500.00           | 91.00           | 329.85      | 11,410.69           | 11,638.21  | -9,303.06  | 14,427,037.358      | 1,704,926.053      | 39.725981992 | -80.770565818 |
| 26,600.00           | 91.00           | 329.85      | 11,408.95           | 11,724.66  | -9,353.28  | 14,427,123.816      | 1,704,875.832      | 39.726219782 | -80.770743644 |
| 26,700.00           | 91.00           | 329.85      | 11,407.20           | 11,811.12  | -9,403.50  | 14,427,210.273      | 1,704,825.612      | 39.726457572 | -80.770921471 |
| 26,800.00           | 91.00           | 329.85      | 11,405.46           | 11,897.58  | -9,453.72  | 14,427,296.730      | 1,704,775.392      | 39.726695362 | -80.771099298 |
| 26,900.00           | 91.00           | 329.85      | 11,403.72           | 11,984.04  | -9,503.94  | 14,427,383.187      | 1,704,725.172      | 39.726933152 | -80.771277128 |
| 27,000.00           | 91.00           | 329.85      | 11,401.98           | 12,070.49  | -9,554.16  | 14,427,469.645      | 1,704,674.952      | 39.727170942 | -80.771454958 |
| 27,100.00           | 91.00           | 329.85      | 11,400.24           | 12,156.95  | -9,604.38  | 14,427,556.102      | 1,704,624.732      | 39.727408731 | -80.771632789 |
| 27,200.00           | 91.00           | 329.85      | 11,398.49           | 12,243.41  | -9,654.60  | 14,427,642.559      | 1,704,574.512      | 39.727646520 | -80.771810622 |
| 27,300.00           | 91.00           | 329.85      | 11,396.75           | 12,329.87  | -9,704.82  | 14,427,729.016      | 1,704,524.291      | 39.727884308 | -80.771988456 |
| 27,400.00           | 91.00           | 329.85      | 11,395.01           | 12,416.32  | -9,755.04  | 14,427,815.474      | 1,704,474.071      | 39.728122097 | -80.772166291 |
| 27,500.00           | 91.00           | 329.85      | 11,393.27           | 12,502.78  | -9,805.26  | 14,427,901.931      | 1,704,423.851      | 39.728359885 | -80.772344128 |
| 27,600.00           | 91.00           | 329.85      | 11,391.53           | 12,589.24  | -9,855.49  | 14,427,988.388      | 1,704,373.631      | 39.728597673 | -80.772521965 |
| 27,700.00           | 91.00           | 329.85      | 11,389.78           | 12,675.70  | -9,905.71  | 14,428,074.845      | 1,704,323.411      | 39.728835460 | -80.772699804 |
| 27,800.00           | 91.00           | 329.85      | 11,388.04           | 12,762.15  | -9,955.93  | 14,428,161.303      | 1,704,273.191      | 39.729073247 | -80.772877644 |
| 27,900.00           | 91.00           | 329.85      | 11,386.30           | 12,848.61  | -10,006.15 | 14,428,247.760      | 1,704,222.970      | 39.729311034 | -80.773055485 |
| 28,000.00           | 91.00           | 329.85      | 11,384.56           | 12,935.07  | -10,056.37 | 14,428,334.217      | 1,704,172.750      | 39.729548821 | -80.773233328 |
| 28,100.00           | 91.00           | 329.85      | 11,382.82           | 13,021.53  | -10,106.59 | 14,428,420.675      | 1,704,122.530      | 39.729786607 | -80.773411172 |
| 28,200.00           | 91.00           | 329.85      | 11,381.07           | 13,107.98  | -10,156.81 | 14,428,507.132      | 1,704,072.310      | 39.730024394 | -80.773589017 |
| 28,300.00           | 91.00           | 329.85      | 11,379.33           | 13,194.44  | -10,207.03 | 14,428,593.589      | 1,704,022.090      | 39.730262179 | -80.773766863 |
| 28,400.00           | 91.00           | 329.85      | 11,377.59           | 13,280.90  | -10,257.25 | 14,428,680.046      | 1,703,971.870      | 39.730499965 | -80.773944710 |
| 28,500.00           | 91.00           | 329.85      | 11,375.85           | 13,367.36  | -10,307.47 | 14,428,766.504      | 1,703,921.649      | 39.730737750 | -80.774122559 |
| 28,600.00           | 91.00           | 329.85      | 11,374.11           | 13,453.81  | -10,357.69 | 14,428,852.961      | 1,703,871.429      | 39.730975535 | -80.774300409 |
| 28,700.00           | 91.00           | 329.85      | 11,372.36           | 13,540.27  | -10,407.91 | 14,428,939.418      | 1,703,821.209      | 39.731213320 | -80.774478260 |
| 28,800.00           | 91.00           | 329.85      | 11,370.62           | 13,626.73  | -10,458.13 | 14,429,025.875      | 1,703,770.989      | 39.731451104 | -80.774656112 |
| 28,900.00           | 91.00           | 329.85      | 11,368.88           | 13,713.19  | -10,508.35 | 14,429,112.333      | 1,703,720.769      | 39.731688889 | -80.774833965 |
| 29,000.00           | 91.00           | 329.85      | 11,367.14           | 13,799.64  | -10,558.57 | 14,429,198.790      | 1,703,670.549      | 39.731926673 | -80.775011820 |
| 29,065.32           | 91.00           | 329.85      | 11,366.00           | 13,856.12  | -10,591.37 | 14,429,255.266      | 1,703,637.743      | 39.732082000 | -80.775128000 |

PBHL/TD 29065.32 MD 11366.00 TVD



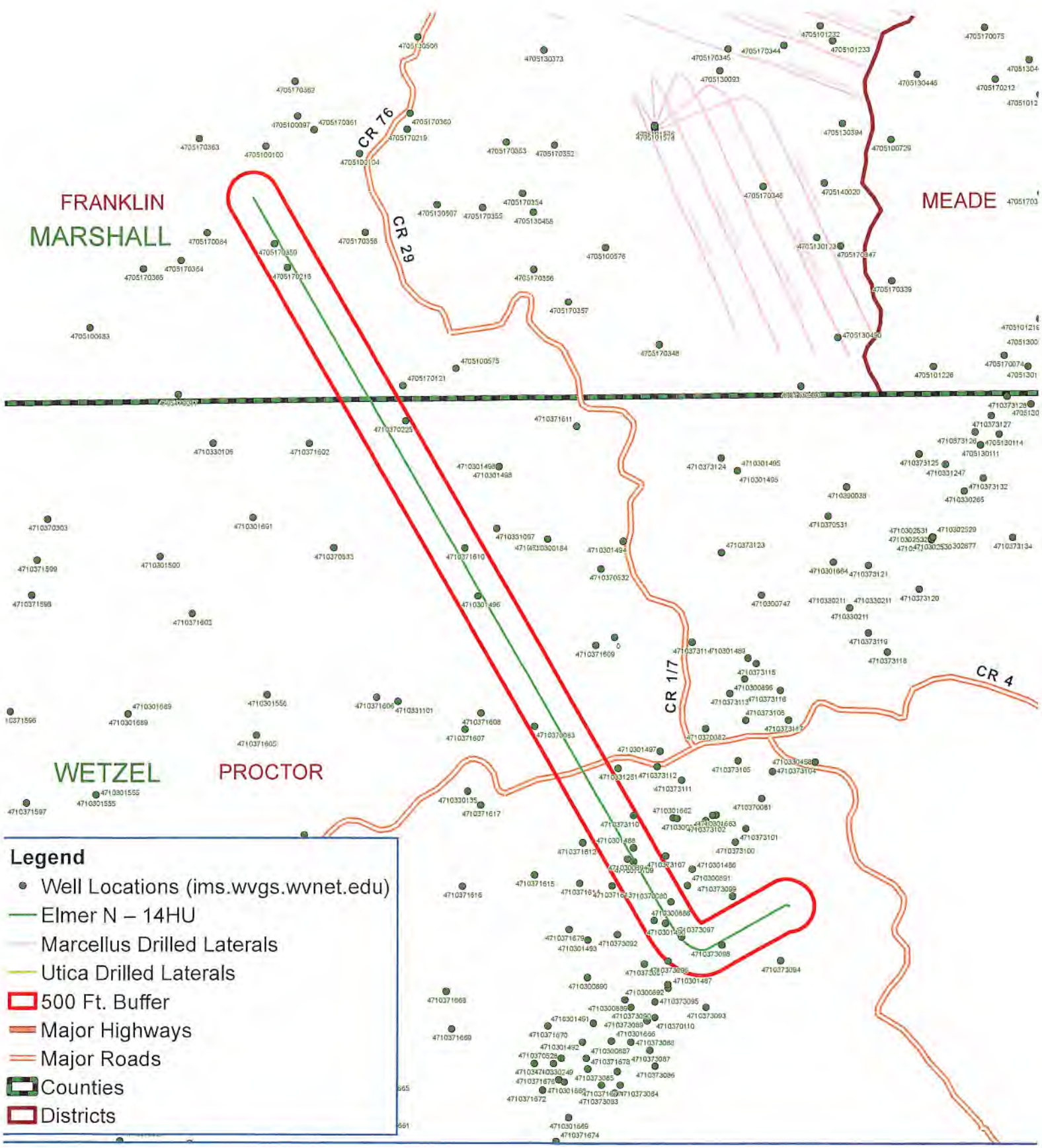


Planning Report - Geographic

|           |  |                              |                             |
|-----------|--|------------------------------|-----------------------------|
| Database: | DB_Dec2220_v16                             | Local Co-ordinate Reference: | Well Elmer N-14 HU (slot A) |
| Company:  | Tug Hill Operating LLC                     | TVD Reference:               | GL @ 1277.00ft              |
| Project:  | Wetzel County, West Virginia (UTM17 NAD83) | MD Reference:                | GL @ 1277.00ft              |
| Site:     | Elmer                                      | North Reference:             | Grid                        |
| Well:     | Elmer N-14 HU (slot A)                     | Survey Calculation Method:   | Minimum Curvature           |
| Wellbore: | Original Hole                              |                              |                             |
| Design:   | rev1                                       |                              |                             |

| Design Targets  |           |          |           |           |            |                |               |              |               |
|---|-----------|----------|-----------|-----------|------------|----------------|---------------|--------------|---------------|
| Target Name   | Dip Angle | Dip Dir. | TVD       | +N/-S     | +E/-W      | Northing       | Easting       | Latitude     | Longitude     |
| - hit/miss target   | (°)       | (°)      | (ft)      | (ft)      | (ft)       | (usft)         | (usft)        |              |               |
| - Shape   |           |          |           |           |            |                |               |              |               |
| Elmer N-14 HU BHL<br>- plan hits target center<br>- Point   | 0.00      | 0.00     | 11,366.00 | 13,856.12 | -10,591.37 | 14,429,255.266 | 1,703,637.743 | 39.732082000 | -80.775128000 |
| Elmer N-14 HU LP 50E<br>- plan misses target center by 0.01ft at 12648.02ft MD (11651.99 TVD, -337.86 N, -2346.56 E)<br>- Point | 0.00      | 0.00     | 11,652.00 | -337.86   | -2,346.56  | 14,415,061.319 | 1,711,882.540 | 39.693040611 | -80.745945245 |
| Elmer N-14 HU LP<br>- plan misses target center by 43.24ft at 12673.14ft MD (11651.55 TVD, -316.15 N, -2359.17 E)<br>- Point    | 0.00      | 0.00     | 11,652.00 | -337.86   | -2,396.56  | 14,415,061.319 | 1,711,832.537 | 39.693041000 | -80.746123000 |

| Plan Annotations |                |                   |            |                                  |  |
|------------------|----------------|-------------------|------------|----------------------------------|--|
| Measured Depth   | Vertical Depth | Local Coordinates |            | Comment                          |  |
| (ft)             | (ft)           | +N/-S (ft)        | +E/-W (ft) |                                  |  |
| 3,102.00         | 3,102.00       | 0.00              | 0.00       | KOP Begin 2°/100' build          |  |
| 3,252.00         | 3,251.93       | 1.66              | -3.56      | Begin 3.00° tangent              |  |
| 4,302.00         | 4,300.49       | 24.88             | -53.36     | Begin 2°/100' drop               |  |
| 4,452.00         | 4,450.42       | 26.54             | -56.92     | Begin vertical hold              |  |
| 7,203.58         | 7,202.00       | 26.54             | -56.92     | Begin 2°/100' build              |  |
| 8,774.16         | 8,695.08       | -176.97           | -424.15    | Begin 31.41° tangent             |  |
| 11,328.54        | 10,875.11      | -822.30           | -1,588.58  | Begin 6°/100' build/turn         |  |
| 12,072.57        | 11,461.71      | -740.94           | -2,007.41  | Begin 8°/100' build/turn         |  |
| 12,648.02        | 11,651.99      | -337.86           | -2,346.56  | Begin 91.00° lateral             |  |
| 29,065.32        | 11,366.00      | 13,856.12         | -10,591.37 | PBHL/TD 29065.32 MD 11366.00 TVD |  |



**Legend**

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



# Elmer N – 14HU Proctor District Wetzel County, WV



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

Map Prepared by:  
10/21/2022  
**EPS**  
 LAND SERVICES

## 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](mailto:apicard@dpslandservices.com), DPS GIS (10/15/2021) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

#### Request maps for:

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

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

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

**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                      |
|------------|-----------------------------------|-------------|----------------|--------------------------------|---|-------------------------------|
| 4710373098 | 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. |
| 4710301490 | Perkins Oil and Gas, Inc.         | 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. |
| 4710370080 | South Penn Oil (S. Penn Nat. Gas) | 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. |
| 4710373096 | 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. |

| 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                      |
|------------|---------------------------|-------------|----------------|--------------------------------|---|-------------------------------|
| 4710373097 | 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. |
| 4710300886 | Perkins Oil and Gas, Inc. | 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. |
| 4710301488 | Perkins Oil and Gas, Inc. | 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. |
| 4710373109 | 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 in the planned Point Pleasant well.   | State records are incomplete. |
| 4710373110 | 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 in the planned Point Pleasant well.   | State records are incomplete. |

| 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                      |
|------------|-----------------------------------|-------------|----------------|--------------------------------|---|-------------------------------|
| 4710300894 | Perkins Oil and Gas, Inc.         | 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. |
| 4710370083 | South Penn Oil (S. Penn Nat. Gas) | 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. |
| 4710301496 | Perkins Oil and Gas, Inc.         | 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. |
| 4710370225 | unknown                           | 2890' TVD   | Gordon         | unknown                        | No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.   |                               |
| 4710371610 | 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. |

| 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                      |
|------------|--------------------------------|-------------|----------------|--------------------------------|---|-------------------------------|
| 4705170218 | Tri-State Oil & Gas            | 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. |
| 4705170359 | 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 in the planned Point Pleasant well.   | State records are incomplete. |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 73098**

Report Time: Tuesday, October 19, 2021 2:07:15 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD     | UTME     | UTMN    |
|------------|--------|--------|--------------|------------|-----------|-----------|------------|----------|---------|
| 4710373098 | Wetzel | 73098  | Proctor      | Wileyville | Littleton | 39.691866 | -80.742304 | 522095.4 | 4393590 |

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 |
|------------|--------|--------|---------|--------------------------|----------|--------|-------|-----------|-------------|------------------------|---------|--------------|------------|
| 4710373098 | -/-    |        | unknown | Prpty Map Nancy J Garner |          |        |       |           |             | ----- unknown -----    |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |  |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|--|
| 4710373098 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |  |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 01490**

Report Time: Tuesday, October 19, 2021 2:07:02 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD    | UTME     | UTMN      |
|------------|--------|--------|--------------|------------|-----------|-----------|-----------|----------|-----------|
| 4710301490 | Wetzel | 1490   | Proctor      | Wileyville | Littleton | 39.693041 | -80.74625 | 521756.7 | 4393719.4 |

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 |
|------------|--------|--------|------------------------|-----------------|----------|--------|-------|-----------|-------------|---------------------------|---------|--------------|------------|
| 4710301490 | -/-    |        | Original Loc Completed | J R Huggins Hrs |          |        |       |           |             | Perkins Oil and Gas, Inc. |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |  |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|--|
| 4710301490 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |  |

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

| API        | PRODUCING_OPERATOR | PRD_YEAR | ANN_GAS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DCM |
|------------|--------------------|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4710301490 | Aries Petroleum    | 1996     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |

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

| API        | PRODUCING_OPERATOR | PRD_YEAR | ANN_OIL | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DCM |
|------------|--------------------|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4710301490 | Aries Petroleum    | 1996     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |



WV Geological & Economic Survey:

**Well: County = 103 Permit = 70080**

Report Time: Tuesday, October 19, 2021 2:06:50 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|--------|--------|--------------|------------|-----------|-----------|------------|----------|-----------|
| 4710370080 | Wetzel | 70080  | Proctor      | Wileyville | Littleton | 39.694201 | -80.745875 | 521788.5 | 4393848.3 |

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 |
|------------|--------|--------------|-----------|---------------|----------|--------|-------|-----------|-------------|-----------------------------------|---------|--------------|------------|
| 4710370080 | -/-    | Original Loc | Completed | Henry Garner  | 3        |        |       |           |             | South Penn Oil (S. Penn Nat. Gas) |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD  | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD  | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |
|------------|--------|---------|------|-------|--------|------------|-------------|---------------|--------------|---------------|---------|----------|------|-----|---------|-----|-------|-------|-------|-------|-----|
| 4710370080 | -/-    | -/-     |      |       | Gordon |            |             | unclassified  | unclassified | not available | unknown | unknown  | 2980 |     | 2980    |     |       |       |       |       |     |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 73096**

Report Time: Tuesday, October 19, 2021 2:06:38 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|--------|--------|--------------|------------|-----------|-----------|------------|----------|-----------|
| 4710373096 | Wetzel | 73096  | Proctor      | Wileyville | Littleton | 39.690996 | -80.746058 | 521773.8 | 4393492.5 |

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 |
|------------|--------|---------|-----------|---------------|----------|--------|-------|-----------|-------------|------------------------|---------|--------------|------------|
| 4710373096 | -/-    | unknown | Prpty Map | Henry Garner  | 5        |        |       |           |             | ----- unknown -----    |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|
| 4710373096 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 73097**

Report Time: Tuesday, October 19, 2021 2:06:23 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD    | UTME     | UTMN      |
|------------|--------|--------|--------------|------------|-----------|-----------|-----------|----------|-----------|
| 4710373097 | Wetzel | 73097  | Proctor      | Wileyville | Littleton | 39.692302 | -80.74512 | 521853.8 | 4393637.7 |

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 |
|------------|--------|---------|-----------|---------------|----------|--------|-------|-----------|-------------|------------------------|---------|--------------|------------|
| 4710373097 | -/-    | unknown | Prpty Map | Henry Garner  | 2        |        |       |           |             | ----- unknown -----    |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|
| 4710373097 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |

WV Geological & Economic Survey:

Well: County = 103 Permit = 00886

Report Time: Tuesday, October 19, 2021 2:05:54 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_15 | LAT_DD | LON_DD | UTME | UTMN |
|------------|--------|--------|--------------|---------|---------|--------|--------|------|------|
| 4710300886 | Wetzel | 886    | unknown      | unknown | unknown |        |        |      |      |

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 |
|------------|--------|--------------|-----------|---------------|----------|--------|-------|-----------|-------------|---------------------------|---------|--------------|------------|
| 4710300886 | -/-    | Original Loc | Completed | J Huggins     | 1        |        |       |           |             | Perkins Oil and Gas, Inc. |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD   | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT |
|------------|--------|---------|------|-------|---------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|
| 4710300886 | -/-    | -/-     |      |       | Unnamed |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     | 0       |     | 0     | 0     | 0     | 0     |

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

| API        | PRODUCING_OPERATOR        | PRD_YEAR | ANN_GAS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DCM |
|------------|---------------------------|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4710300886 | Perkins Oil and Gas, Inc. | 1985     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710300886 | Perkins Oil and Gas, Inc. | 1988     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300886 | Perkins Oil and Gas, Inc. | 1989     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300886 | Perkins Oil and Gas, Inc. | 1990     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300886 | Perkins Oil and Gas, Inc. | 1991     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710300886 | Perkins Oil and Gas, Inc. | 1992     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300886 | Perkins Oil and Gas, Inc. | 1994     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710300886 | Perkins Oil and Gas, Inc. | 1995     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710300886 | Perkins Oil and Gas, Inc. | 1996     | 186     | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 186 |
| 4710300886 | Perkins Oil and Gas, Inc. | 1997     | 978     | 178 | 259 | 0   | 0   | 251 | 50  | 0   | 0   | 0   | 59  | 181 | 0   |
| 4710300886 | Perkins Oil and Gas, Inc. | 1998     | 1,436   | 0   | 0   | 0   | 0   | 27  | 205 | 112 | 220 | 222 | 220 | 204 | 226 |
| 4710300886 | Perkins Oil and Gas, Inc. | 1999     | 2,382   | 319 | 188 | 280 | 200 | 187 | 47  | 123 | 215 | 219 | 186 | 220 | 198 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2001     | 2,200   | 189 | 160 | 199 | 178 | 194 | 153 | 203 | 204 | 192 | 169 | 226 | 143 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2002     | 1,819   | 155 | 119 | 201 | 159 | 143 | 158 | 184 | 162 | 132 | 159 | 84  | 163 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2003     | 1,651   | 122 | 109 | 163 | 162 | 159 | 155 | 175 | 166 | 177 | 159 | 2   | 102 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2004     | 1,827   | 149 | 142 | 169 | 170 | 142 | 154 | 171 | 131 | 150 | 154 | 156 | 139 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2005     | 1,589   | 141 | 118 | 107 | 137 | 140 | 139 | 83  | 147 | 143 | 135 | 159 | 140 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2006     | 1,538   | 123 | 90  | 141 | 113 | 136 | 133 | 141 | 143 | 135 | 138 | 125 | 120 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2007     | 1,535   | 128 | 98  | 122 | 126 | 137 | 133 | 117 | 140 | 136 | 143 | 132 | 123 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2008     | 1,441   | 124 | 111 | 113 | 87  | 95  | 135 | 140 | 140 | 105 | 139 | 129 | 123 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2009     | 1,366   | 107 | 107 | 117 | 107 | 127 | 129 | 128 | 136 | 4   | 133 | 146 | 125 |
| 4710300886 | Perkins Oil and Gas, Inc. | 2010     | 340     | 34  | 31  | 37  | 39  | 38  | 32  | 34  | 34  | 21  | 6   | 19  | 15  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2011     | 263     | 14  | 18  | 28  | 37  | 37  | 29  | 35  | 29  | 36  | 0   | 0   | 0   |
| 4710300886 | Perkins Oil and Gas, Inc. | 2012     | 196     | 21  | 18  | 22  | 15  | 18  | 19  | 19  | 22  | 21  | 21  | 0   | 0   |
| 4710300886 | Perkins Oil and Gas, Inc. | 2013     | 210     | 2   | 8   | 9   | 21  | 21  | 20  | 24  | 24  | 24  | 22  | 18  | 17  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2014     | 246     | 17  | 17  | 10  | 25  | 14  | 16  | 25  | 25  | 23  | 23  | 29  | 22  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2015     | 260     | 27  | 25  | 16  | 15  | 19  | 17  | 23  | 32  | 17  | 29  | 25  | 15  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2016     | 205     | 11  | 8   | 15  | 16  | 19  | 18  | 18  | 21  | 22  | 14  | 16  | 26  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2017     | 528     | 220 | 0   | 24  | 36  | 22  | 30  | 26  | 26  | 0   | 42  | 40  | 62  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2018     | 110     | 8   | 0   | 8   | 12  | 8   | 8   | 9   | 5   | 8   | 8   | 13  | 23  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2019     | 50      | 14  | 0   | 1   | 2   | 0   | 3   | 4   | 3   | 1   | 6   | 6   | 10  |
| 4710300886 | Perkins Oil and Gas, Inc. | 2020     | 1,295   | 98  | 92  | 113 | 108 | 111 | 114 | 119 | 122 | 112 | 112 | 95  | 99  |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 01488**

Report Time: Tuesday, October 19, 2021 2:05:42 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|--------|--------|--------------|------------|-----------|-----------|------------|----------|-----------|
| 4710301488 | Wetzel | 1488   | Proctor      | Wileyville | Littleton | 39.697101 | -80.748504 | 521562.2 | 4394169.5 |

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 |
|------------|--------|--------|--------------|---------------|-----------|--------|-------|-----------|-------------|---------------------------|---------|--------------|------------|
| 4710301488 | -/-    |        | Original Loc | Completed     | Gamer Hrs | 16     |       |           |             | Perkins Oil and Gas, Inc. |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|
| 4710301488 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 73109**

Report Time: Tuesday, October 19, 2021 2:05:30 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|--------|--------|--------------|------------|-----------|-----------|------------|----------|-----------|
| 4710373109 | Wetzel | 73109  | Proctor      | Wileyville | Littleton | 39.696366 | -80.748498 | 521562.9 | 4394087.9 |

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 |
|------------|--------|--------|---------|---------------|--------------|--------|-------|-----------|-------------|--------------------------|---------|--------------|------------|
| 4710373109 | -/-    |        | unknown | Prpty Map     | Henry Garner | 256    |       |           |             | 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 | O_AFT | NGL |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|
| 4710373109 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 73110**

Report Time: Tuesday, October 19, 2021 2:05:06 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75    | QUAD_15   | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|--------|--------|--------------|------------|-----------|-----------|------------|----------|-----------|
| 4710373110 | Wetzel | 73110  | Proctor      | Wileyville | Littleton | 39.698833 | -80.748498 | 521562.1 | 4394361.7 |

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 |
|------------|--------|--------|---------|---------------|--------------|--------|-------|-----------|-------------|--------------------------|---------|--------------|------------|
| 4710373110 | -/-    |        | unknown | Prpty Map     | Henry Garner | 257    |       |           |             | 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 | O_AFT | NGL |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|
| 4710373110 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |

WV Geological & Economic Survey:

Well: County = 103 Permit = 00894

Report Time: Tuesday, October 19, 2021 2:04:41 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75 | QUAD_15 | LAT_DD | LON_DD | UTME | UTMN |
|------------|--------|--------|--------------|---------|---------|--------|--------|------|------|
| 4710300894 | Wetzel | 894    | unknown      | unknown | unknown |        |        |      |      |

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 |
|------------|--------|--------|--------------|---------------|-----------------------|--------|-------|-----------|-------------|---------------------------|---------|--------------|------------|
| 4710300894 | -/-    |        | Original Loc | Completed     | Albert & Henry Garner | 4      |       |           |             | Perkins Oil and Gas, Inc. |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD   | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT |
|------------|--------|---------|------|-------|---------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|
| 4710300894 | -/-    | -/-     |      |       | Unnamed |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     | 0       |     | 0     | 0     | 0     | 0     |

There is no Pay data for this well

Production Gas Information: (Volumes in Mcf)

| API        | PRODUCING_OPERATOR        | PRD_YEAR | ANN_GAS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DCM |
|------------|---------------------------|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4710300894 | Perkins Oil and Gas, Inc. | 1989     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300894 | Perkins Oil and Gas, Inc. | 1990     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300894 | Perkins Oil and Gas, Inc. | 1991     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710300894 | Perkins Oil and Gas, Inc. | 1992     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300894 | Perkins Oil and Gas, Inc. | 1993     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710300894 | Perkins Oil and Gas, Inc. | 1994     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710300894 | Perkins Oil and Gas, Inc. | 1995     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710300894 | Perkins Oil and Gas, Inc. | 1996     | 186     | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 186 |
| 4710300894 | Perkins Oil and Gas, Inc. | 1997     | 978     | 178 | 259 | 0   | 0   | 251 | 50  | 0   | 0   | 0   | 59  | 181 | 0   |
| 4710300894 | Perkins Oil and Gas, Inc. | 1998     | 1,436   | 0   | 0   | 0   | 0   | 27  | 205 | 112 | 220 | 222 | 220 | 204 | 226 |
| 4710300894 | Perkins Oil and Gas, Inc. | 1999     | 2,382   | 319 | 188 | 280 | 200 | 187 | 47  | 123 | 215 | 219 | 186 | 220 | 198 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2001     | 2,200   | 189 | 160 | 199 | 178 | 194 | 153 | 203 | 204 | 182 | 169 | 226 | 143 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2002     | 1,819   | 155 | 119 | 201 | 159 | 143 | 158 | 184 | 162 | 132 | 159 | 84  | 163 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2003     | 1,651   | 122 | 109 | 163 | 162 | 159 | 155 | 175 | 166 | 177 | 159 | 2   | 102 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2004     | 1,827   | 149 | 142 | 169 | 170 | 142 | 154 | 171 | 131 | 150 | 154 | 156 | 139 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2005     | 1,589   | 141 | 118 | 107 | 137 | 140 | 139 | 83  | 147 | 143 | 135 | 159 | 140 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2006     | 1,538   | 123 | 90  | 141 | 113 | 136 | 133 | 141 | 143 | 135 | 138 | 125 | 120 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2008     | 1,441   | 124 | 111 | 113 | 87  | 95  | 135 | 140 | 140 | 105 | 139 | 129 | 123 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2009     | 1,366   | 107 | 107 | 117 | 107 | 127 | 129 | 128 | 136 | 4   | 133 | 146 | 125 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2010     | 826     | 58  | 73  | 87  | 70  | 78  | 74  | 72  | 75  | 39  | 69  | 68  | 63  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2011     | 804     | 64  | 66  | 67  | 73  | 80  | 71  | 78  | 73  | 73  | 60  | 49  | 50  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2012     | 611     | 57  | 50  | 56  | 40  | 51  | 46  | 53  | 58  | 51  | 54  | 50  | 45  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2013     | 560     | 58  | 37  | 48  | 51  | 42  | 45  | 51  | 49  | 46  | 48  | 43  | 42  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2014     | 521     | 49  | 58  | 52  | 41  | 15  | 0   | 54  | 52  | 48  | 49  | 55  | 48  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2015     | 505     | 53  | 65  | 46  | 31  | 34  | 32  | 44  | 60  | 32  | 33  | 43  | 32  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2016     | 386     | 35  | 35  | 36  | 23  | 6   | 36  | 37  | 35  | 46  | 29  | 30  | 36  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2017     | 626     | 62  | 24  | 42  | 62  | 56  | 42  | 48  | 42  | 48  | 42  | 58  | 100 |
| 4710300894 | Perkins Oil and Gas, Inc. | 2018     | 171     | 4   | 17  | 18  | 22  | 13  | 14  | 25  | 0   | 17  | 12  | 16  | 13  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2019     | 112     | 24  | 13  | 2   | 17  | 7   | 1   | 2   | 5   | 3   | 9   | 18  | 11  |
| 4710300894 | Perkins Oil and Gas, Inc. | 2020     | 1,295   | 96  | 92  | 113 | 108 | 111 | 114 | 119 | 122 | 112 | 112 | 95  | 99  |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 70083**

Report Time: Tuesday, October 19, 2021 2:04:23 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75          | QUAD_15          | LAT_DD    | LON_DD     | UTME   | UTMN      |
|------------|--------|--------|--------------|------------------|------------------|-----------|------------|--------|-----------|
| 4710370083 | Wetzel | 70083  | Proctor      | New Martinsville | New Martinsville | 39.703626 | -80.755446 | 520965 | 4394892.1 |

There is no Bottom Hole Location data for this well

Owner Information:

| API        | CMP_DT | SUFFIX       | STATUS    | SURFACE_OWNER | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION            | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
|------------|--------|--------------|-----------|---------------|----------|--------|-------|-----------|-------------|-----------------------------------|---------|--------------|------------|
| 4710370083 | -/-    | Original Loc | Completed | Henry Garner  | 29       |        |       |           |             | South Penn Oil (S. Penn Nat. Gas) |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD              | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGI |
|------------|--------|---------|------|-------|--------------------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|
| 4710370083 | -/-    | -/-     |      |       | Big Injun (undiff) |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |

WV Geological & Economic Survey:

Well: County = 103 Permit = 01496

Report Time: Tuesday, October 19, 2021 2:03:57 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75          | QUAD_15          | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|--------|--------|--------------|------------------|------------------|-----------|------------|----------|-----------|
| 4710301496 | Welzel | 1496   | Magnolia     | New Martinsville | New Martinsville | 39.710636 | -80.759389 | 520624.9 | 4395669.1 |

There is no Bottom Hole Location data for this well

Owner Information:

| API        | CMP_DT     | SUFFIX       | STATUS    | SURFACE_OWNER         | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION   | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
|------------|------------|--------------|-----------|-----------------------|----------|--------|-------|-----------|-------------|--------------------------|---------|--------------|------------|
| 4710301496 | 11/22/1902 | Original Loc | Completed | Robert & S J Coffield |          | 282    |       | 1916      |             | 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 | O_AFT |
|------------|------------|---------|------|--------------|---------|------------|-------------|---------------|--------------|------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|
| 4710301496 | 11/22/1902 | --      | 1020 | Spirit Level | Unnamed |            | Gordon      | unclassified  | unclassified | Gas  | unknown | unknown  |     |     | 0       |     | 7475  | 0     | 0     | 0     |

Pay/Show/Water Information:

| API        | CMP_DT     | ACTIVITY | PRODUCT | SECTION  | DEPTH_TOP | FM_TOP | DEPTH_BOT | FM_BOT | G_BEF | G_AFT | O_BEF | O_AFT | WATER_QNTY |
|------------|------------|----------|---------|----------|-----------|--------|-----------|--------|-------|-------|-------|-------|------------|
| 4710301496 | 11/22/1902 | Pay      | Gas     | Vertical |           | Gordon | 0         | Gordon | 0     | 0     |       |       |            |

Production Gas Information: (Volumes in Mcf)

| API        | PRODUCING_OPERATOR        | PRD_YEAR | ANN_GAS | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DCM |
|------------|---------------------------|----------|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4710301496 | Perkins Oil and Gas, Inc. | 1990     | 0       | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| 4710301496 | Perkins Oil and Gas, Inc. | 1991     |         |     |     |     |     |     |     |     |     |     |     |     |     |
| 4710301496 | Perkins Oil and Gas, Inc. | 1997     | 978     | 178 | 259 | 0   | 0   | 251 | 50  | 0   | 0   | 0   | 59  | 181 | 0   |
| 4710301496 | Perkins Oil and Gas, Inc. | 1998     | 1,436   | 0   | 0   | 0   | 0   | 27  | 205 | 112 | 220 | 222 | 220 | 204 | 226 |
| 4710301496 | Perkins Oil and Gas, Inc. | 1999     | 2,362   | 319 | 188 | 280 | 200 | 187 | 47  | 123 | 215 | 219 | 186 | 220 | 198 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2001     | 2,200   | 189 | 160 | 199 | 178 | 194 | 153 | 203 | 204 | 182 | 169 | 226 | 143 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2002     | 1,819   | 155 | 119 | 201 | 159 | 143 | 158 | 184 | 162 | 132 | 159 | 84  | 163 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2003     | 1,651   | 122 | 109 | 163 | 162 | 159 | 155 | 175 | 166 | 177 | 159 | 2   | 102 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2004     | 1,827   | 149 | 142 | 169 | 170 | 142 | 154 | 171 | 131 | 150 | 154 | 156 | 139 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2005     | 1,569   | 141 | 118 | 107 | 137 | 140 | 139 | 83  | 147 | 143 | 135 | 159 | 140 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2006     | 1,538   | 123 | 90  | 141 | 113 | 136 | 133 | 141 | 143 | 135 | 138 | 125 | 120 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2007     | 1,535   | 128 | 98  | 122 | 126 | 137 | 133 | 117 | 140 | 136 | 143 | 132 | 123 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2008     | 1,441   | 124 | 111 | 113 | 87  | 95  | 135 | 140 | 140 | 105 | 139 | 129 | 123 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2009     | 1,366   | 107 | 107 | 117 | 107 | 127 | 129 | 128 | 136 | 4   | 133 | 146 | 125 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2010     | 2,806   | 275 | 43  | 9   | 251 | 279 | 268 | 318 | 303 | 168 | 317 | 282 | 293 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2011     | 3,364   | 226 | 251 | 285 | 307 | 334 | 291 | 323 | 325 | 304 | 269 | 219 | 230 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2012     | 2,811   | 240 | 229 | 251 | 176 | 243 | 223 | 237 | 286 | 250 | 258 | 217 | 201 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2013     | 2,713   | 279 | 179 | 236 | 212 | 219 | 181 | 245 | 252 | 234 | 242 | 226 | 208 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2014     | 3,466   | 242 | 259 | 280 | 321 | 314 | 286 | 285 | 275 | 281 | 325 | 258 | 340 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2015     | 3,064   | 284 | 275 | 222 | 174 | 207 | 206 | 287 | 414 | 217 | 242 | 235 | 301 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2016     | 3,005   | 220 | 264 | 243 | 215 | 255 | 210 | 249 | 235 | 371 | 272 | 252 | 216 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2017     | 5,838   | 414 | 172 | 378 | 524 | 438 | 480 | 590 | 522 | 512 | 556 | 548 | 704 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2018     | 2,406   | 137 | 93  | 185 | 198 | 194 | 212 | 231 | 224 | 265 | 185 | 276 | 206 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2019     | 3,621   | 382 | 421 | 260 | 457 | 292 | 202 | 100 | 382 | 259 | 248 | 348 | 270 |
| 4710301496 | Perkins Oil and Gas, Inc. | 2020     | 1,295   | 98  | 92  | 113 | 106 | 111 | 114 | 119 | 122 | 112 | 112 | 95  | 99  |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 70225**

Report Time: Tuesday, October 19, 2021 2:03:44 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75          | QUAD_15          | LAT_DD    | LON_DD    | UTME     | UTMN    |
|------------|--------|--------|--------------|------------------|------------------|-----------|-----------|----------|---------|
| 4710370225 | Wetzel | 70225  | Proctor      | New Martinsville | New Martinsville | 39.720061 | -80.76446 | 520187.5 | 4396714 |

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_T |
|------------|-----------|--------------|-----------|-----------------|----------|--------------------------|-------|-----------|---------------------|---|---------|--------|
| 4710370225 | 9/20/1902 | Original Loc | Completed | Jason M Parsons | 1        | ML&H Co No 1280/Hope 369 |       |           | OP=Tri-State Gas Co | Oper in Min owner fld.no code assgn(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 | O_AFT | NGL |  |
|------------|-----------|---------|------|--------------|--------|------------|-------------|---------------|--------------|------|---------|----------|------|-----|---------|-----|-------|-------|-------|-------|-----|--|
| 4710370225 | 9/20/1902 | -/-     | 1368 | Ground Level | Gordon | Gordon     |             | unclassified  | unclassified | Gas  | unknown | unknown  | 2890 |     | 2890    |     |       |       |       |       |     |  |

WV Geological & Economic Survey:

**Well: County = 103 Permit = 71610**

Report Time: Tuesday, October 19, 2021 2:03:33 PM

Location Information: [View Map](#)

| API        | COUNTY | PERMIT | TAX_DISTRICT | QUAD_75          | QUAD_15          | LAT_DD    | LON_DD     | UTME   | UTMN      |
|------------|--------|--------|--------------|------------------|------------------|-----------|------------|--------|-----------|
| 4710371610 | Wetzel | 71610  | Proctor      | New Martinsville | New Martinsville | 39.713213 | -80.760324 | 520544 | 4395954.9 |

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 |
|------------|--------|---------|-----------|----------------|----------|--------|-------|-----------|-------------|------------------------|---------|--------------|------------|
| 4710371610 | -/-    | unknown | Prpty Map | Hannah E Smith | 1        |        |       |           |             | ----- unknown -----    |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |  |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|--|
| 4710371610 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |  |

WV Geological & Economic Survey:

**Well: County = 51 Permit = 70218**

Report Time: Tuesday, October 19, 2021 2:03:15 PM

Location Information: [View Map](#)

| API        | COUNTY   | PERMIT | TAX_DISTRICT | QUAD_75          | QUAD_15          | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|----------|--------|--------------|------------------|------------------|-----------|------------|----------|-----------|
| 4705170218 | Marshall | 70218  | Franklin     | New Martinsville | New Martinsville | 39.728326 | -80.772724 | 519476.9 | 4397629.5 |

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 |
|------------|--------|--------------|-----------|---------------|----------|--------|-------|-----------|-------------|------------------------|---------|--------------|------------|
| 4705170218 | -/-    | Original Loc | Completed | Vincent Yohe  | 1        |        |       |           |             | Tri-State Oil & Gas    |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEF | G_AFT | O_BEF | O_AFT | NGL |  |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|-------|-------|-------|-------|-----|--|
| 4705170218 | -/-    | -/-     |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |       |       |       |       |     |  |

WV Geological & Economic Survey:

**Well: County = 51 Permit = 70359**

Report Time: Tuesday, October 19, 2021 2:02:55 PM

Location Information: [View Map](#)

| API        | COUNTY   | PERMIT | TAX_DISTRICT | QUAD_75          | QUAD_15          | LAT_DD    | LON_DD     | UTME     | UTMN      |
|------------|----------|--------|--------------|------------------|------------------|-----------|------------|----------|-----------|
| 4705170359 | Marshall | 70359  | Franklin     | New Martinsville | New Martinsville | 39.729613 | -80.773648 | 519397.3 | 4397772.1 |

There is no Bottom Hole Location data for this well

Owner Information:

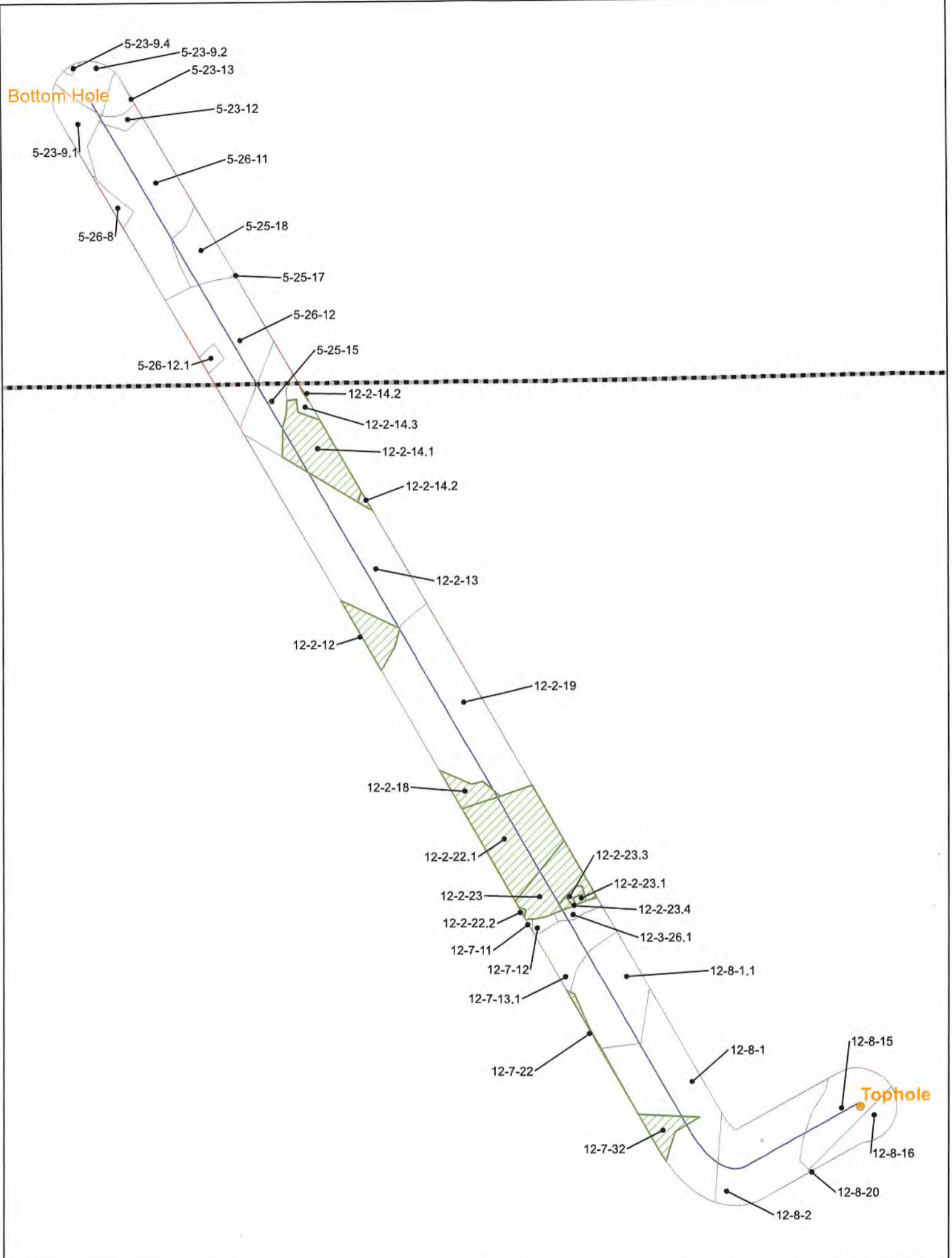
| API        | CMP_DT | SUFFIX  | STATUS    | SURFACE_OWNER | WELL_NUM | CO_NUM | LEASE | LEASE_NUM | MINERAL_OWN | OPERATOR_AT_COMPLETION         | PROP_VD | PROP_TRGT_FM | TFM_EST_PR |
|------------|--------|---------|-----------|---------------|----------|--------|-------|-----------|-------------|--------------------------------|---------|--------------|------------|
| 4705170359 | --     | unknown | Prpty Map | James McHenry |          | 1232   |       |           |             | Manufacturers Light & Heat Co. |         |              |            |

Completion Information:

| API        | CMP_DT | SPUD_DT | ELEV | DATUM | FIELD | DEEPEST_FM | DEEPEST_FMT | INITIAL_CLASS | FINAL_CLASS  | TYPE          | RIG     | CMP_MTHD | TVD | TMD | NEW_FTG | KOD | G_BEFO | G_AFT | O_BEFO | O_AFT | NGL |
|------------|--------|---------|------|-------|-------|------------|-------------|---------------|--------------|---------------|---------|----------|-----|-----|---------|-----|--------|-------|--------|-------|-----|
| 4705170359 | --     | --      |      |       |       |            |             | unclassified  | unclassified | not available | unknown | unknown  |     |     |         |     |        |       |        |       |     |



Elmer N-14HU



Coordinate System: NAD 1983 UTM Zone 17N  
 Projection: Transverse Mercator  
 Datum: North American 1983  
 False Easting: 1000000.000  
 False Northing: 0.000  
 Centre Meridian: -81.0000  
 Scale Factor: 0.9999  
 Latitude Of Origin: 38.0000  
 Units: Feet US

**CONFIDENTIAL**

0 33,000 66,000 132,000 Feet

**TUG HILL OPERATING**

- 500' Buffer
- Force Pool
- Well of Interest

**Elmer N-14HU**  
Operators within 500 Feet of Well Borehole



Operators within 500' of Well Borehole  
Elmer N - 14HU

| COUNTY | DISTRICT | TMP       | MINERAL OWNER OR LESSEE | ADDRESS  |
|--------|----------|-----------|-------------------------|--|
| WETZEL | PROCTOR  | 12-2-12   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-13   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-13   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-13   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-14.1 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-14.2 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-14.3 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-18   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-19   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-22.1 | EQT PRODUCTION COMPANY  | 625 Liberty Avenue<br>Suite 1700<br>Pittsburgh, PA 15222     |
| WETZEL | PROCTOR  | 12-2-22.1 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-22.2 | EQT PRODUCTION COMPANY  | 625 Liberty Avenue<br>Suite 1700<br>Pittsburgh, PA 15222     |
| WETZEL | PROCTOR  | 12-2-22.2 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-23   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-23.1 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-23.3 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-2-23.4 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-3-26.1 | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-7-11   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| WETZEL | PROCTOR  | 12-7-12   | TH EXPLORATION LLC      | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |

REV 1/2022

Operators within 500' of Well Borehole  
Elmer N - 14HU

|          |          |           |                                       |  |
|----------|----------|-----------|---------------------------------------|--|
| WETZEL   | PROCTOR  | 12-7-13.1 | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-7-22   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-7-32   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-8-1    | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-8-1.1  | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-8-2    | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-8-15   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-8-16   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| WETZEL   | PROCTOR  | 12-8-20   | SWN PRODUCTION COMPANY LLC            | 10000 Energy Drive<br>Spring, TX 77389                               |
| WETZEL   | PROCTOR  | 12-8-20   | EQUINOR USA ONSHORE PROPERTIES<br>INC | 6300 Bridge Point Pkwy<br>Building 2, Ste 100<br>Austin, TX 78730    |
| MARSHALL | FRANKLIN | 5-23-9.1  | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-23-9.2  | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-23-9.4  | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-23-12   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-23-12   | TH EXPLORATION II LLC                 | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-23-13   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-25-15   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-25-17   | TH EXPLORATION II LLC                 | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |
| MARSHALL | FRANKLIN | 5-25-17   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107/21/2022 |
| MARSHALL | FRANKLIN | 5-25-18   | TH EXPLORATION LLC                    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107         |

Operators within 500' of Well Borehole  
Elmer N - 14HU

|          |          |           |                       |  |
|----------|----------|-----------|-----------------------|--|
| MARSHALL | FRANKLIN | 5-25-18   | TH EXPLORATION II LLC | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| MARSHALL | FRANKLIN | 5-26-8    | TH EXPLORATION LLC    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| MARSHALL | FRANKLIN | 5-26-8    | TH EXPLORATION II LLC | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| MARSHALL | FRANKLIN | 5-26-11   | TH EXPLORATION LLC    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| MARSHALL | FRANKLIN | 5-26-11   | TH EXPLORATION II LLC | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| MARSHALL | FRANKLIN | 5-26-12   | TH EXPLORATION LLC    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |
| MARSHALL | FRANKLIN | 5-26-12.1 | TH EXPLORATION LLC    | 1320 S. University Blvd<br>Suite 500<br>Fort Worth, TX 76107 |

10/21/2022



**TUG HILL**  
**OPERATING**

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

**Well Name: Elmer N-14HU**

**Pad Name: Elmer**

**County: Marshall**

UTM (meters), NAD83, Zone 17

Northing: 4,393,822.46

Easting: 520,498.07

*Handwritten signature and date: Jerry V. DeRosa 11/19/2022*

**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**

10/21/2022

**ELMER LEASE  
WELL N-14HU  
472.7041 ± ACRES**

(BH) 7,123' (TH) 8,285'

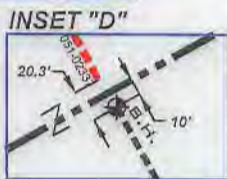
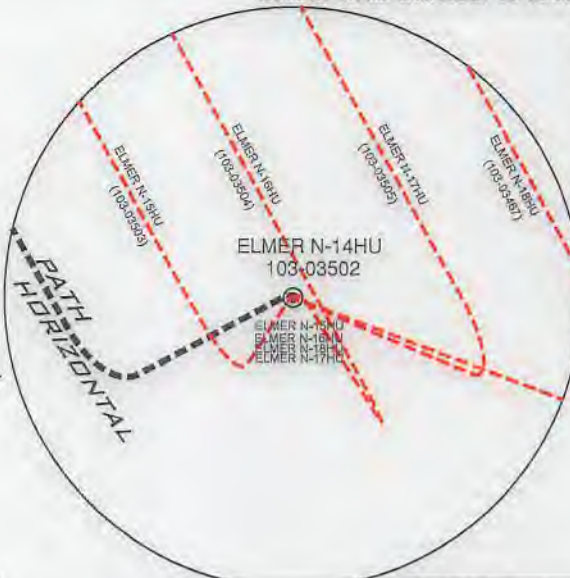
TOP HOLE LATITUDE: 39°42'30"  
BOTTOM HOLE LATITUDE: 39°45'00"

(BH) BOTTOM HOLE LONGITUDE: 80°45'00"  
(TH) TOP HOLE LONGITUDE: 80°42'30"

(BH) 6,546' (TH) 5,274'



NOTE: L.P.1 and LTP are same point.



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS

**NOTES**

1. BORE PATH BASED ON GRID NORTH.
2. NO WATER WELLS WITHIN 250' OF WELL WERE FOUND, NO DWELLINGS WITHIN 625' OF PAD CENTER WERE FOUND.
3. OWNERSHIP TAKEN FROM PUBLIC RECORDS OF WETZEL COUNTY, WV IN JULY, 2022.
4. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
5. WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
6. ALL DEEP WELLS WITHIN 1,000' ARE SHOWN ON THIS PLAT.
7. BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOOTE, P.C. FILE 0058304.0401147

**LEGEND**

- LEASED TRACTS
- SURFACE 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
- FORCED POOL TRACT

**SURFACE HOLE**  
UTM. NAD83, ZONE 17  
IN METERS

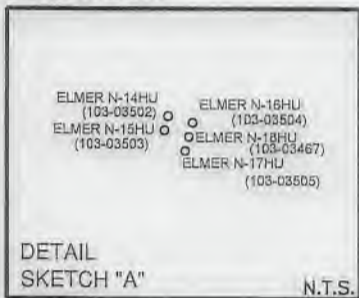
N) 4,393,822.46  
E) 522,498.07

**LANDING POINT 1**  
UTM. NAD83, ZONE 17  
IN METERS

N) 4,393,719.48  
E) 521,782.84

**BOTTOM HOLE**  
UTM. NAD83, ZONE 17  
IN METERS

N) 4,398,045.80  
E) 519,269.82

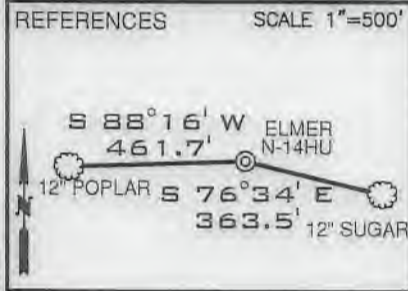


Deep Wells Within 2400' of Proposed Well's Surface Location and/or 500' of Well Lateral

| API          | OPERATOR                |
|--------------|-------------------------|
| 47-051-02337 | Tug Hill Operating, LLC |
| 47-103-03467 | Tug Hill Operating, LLC |
| 47-103-03505 | Tug Hill Operating, LLC |
| 47-103-03504 | Tug Hill Operating, LLC |
| 47-103-03503 | Tug Hill Operating, LLC |

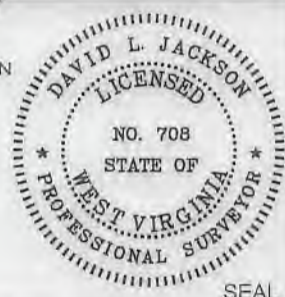
| LINE | BEARING    | DISTANCE  |
|------|------------|-----------|
| L1   | N 42°32' E | 1843.03'  |
| L2   | N 67°54' E | 1408.38'  |
| L3   | S 64°03' W | 82.82'    |
| L4   | S 61°58' W | 1,751.73' |

| CURVE | CHORD BEARING | CHORD LENGTH | RADIUS   | ARC LENGTH |
|-------|---------------|--------------|----------|------------|
| C1    | S 77°42' W    | 142.75'      | 265.88'  | 144.51'    |
| C2    | N 73°35' W    | 182.23'      | 404.26'  | 183.61'    |
| C3    | N 53°07' W    | 227.81'      | 762.38'  | 228.67'    |
| C4    | N 38°45' W    | 423.64'      | 1448.61' | 425.16'    |



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 1460  
Clarksburg, WV 26302  
304-623-5851

FILE NUMBER \_\_\_\_\_  
DRAWING NUMBER ELMER\_N-14HU\_REV1  
SCALE 1" = 2000'  
MINIMUM DEGREE OF ACCURACY 1/200  
PROVEN SOURCE OF ELEVATION SUBMETER MAPPING  
GRADE GPS

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

DATE: SEPTEMBER 26, 2022  
REVISED DATE: SEPTEMBER 28, 2022  
OPERATORS WELL NO. ELMER N-14HU  
API WELL NO. 47-103-03502

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

LOCATION ELEVATION 1276.50' WATERSHED (HUC 10) PROCTOR CREEK OF FRENCH CREEK - OHIO RIVER (HUC-10)  
DISTRICT PROCTOR COUNTY WETZEL  
QUADRANGLE WILEYVILLE 7.5' LEASE NUMBER SEE WW-6A1 FORM

SURFACE OWNER ELNORA TUTTLE HRS ACREAGE 39.19  
OIL & GAS ROYALTY OWNER HENRY & NANCY GARNER - SEE WW-6A1 LEASE ACREAGE 39.19  
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 ESTIMATED DEPTH TVD: 11,871' TMD: 29,065'  
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

10/21/2022

COPY NAME PERMIT

form wwg

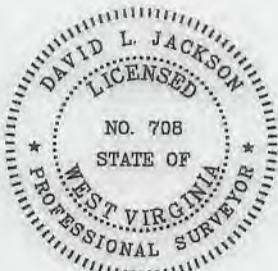
# ELMER LEASE WELL N-14HU 472.7041 ± ACRES

**LEGEND**

- LEASED TRACTS
- - - SURFACE TRACTS
- - - WELL LATERAL
- - - POINT PLEASANT LEGS
- - - UNIT BOUNDARY
- (A) LEASE # (SEE 6AL FORM)
- 400' BORE PATH OFFSET
- 500' WELL BORE OFFSET
- (FTP) PROPOSED FIRST TAKE POINT
- (LTP) PROPOSED LAST TAKE POINT
- ▨ FORCED POOL TRACT

SCALE 1" = 2000'

Note: Tracts Q & V are forced pooled tracts



P.S. 708 *David L Jackson*

10/21/2022



## TUG HILL OPERATING

OPERATOR'S  
 WELL #: ELMER N-14HU  
 DISTRICT: Proctor  
 COUNTY: Wetzel  
 STATE: WV **MOD**  
 API #: 47-103-03502

WELL PLAT  
 PAGE 2 OF 4  
 DATE: 09/26/2022  
 REVISED DATE: 09/28/2022

form ww6

**ELMER LEASE  
WELL N-14HU  
472.7041± ACRES**

| Tags | Number | Tax Map -Parcel | Surface Owner   | Acres  |
|------|--------|-----------------|---|--------|
| A    | S1     | 12-8-15         | ELNORA TUTTLE HRS                                       | 39.19  |
|      | S2     | 12-8-20.5       | JOE MILLER, GERALD & SUE YEATER                         | 44.85  |
| C    | S3     | 12-8-1          | R. SHANE & KATHRYN GODDARD                              | 77     |
| G    | S4     | 12-7-13.1       | WAYNE PAUL GODDARD                                      | 18     |
| I    | S5     | 12-2-22.2       | DAVID A. & MANDY L. TRUJEX                              | 1.186  |
| H    | S6     | 12-7-11         | JOSEPH R. VILLERS                                       | 1.5    |
| J    | S7     | 12-7-12         | JOSEPH R. VILLERS                                       | 1.6    |
| N    | S8     | 12-3-24.4       | SHARON HOWELL ET AL: GLORIA A. NICE - L/E               | 0.422  |
| M    | S9     | 12-3-23.6       | KENNETH W. GODDARD                                      | 0.766  |
| L    | S10    | 12-3-23.1       | KENNETH W. GODDARD                                      | 0.36   |
| K    | S11    | 12-3-26.1       | JOSEPH MARK KLUG  | 3.242  |
|      | S12    | 12-3-27         | CATHY A. PURPURA  | 0.227  |
| Q    | S13    | 12-2-23         | DAVID A. NICE   | 21.7   |
| P    | S14    | 12-2-21.1       | DAVID A. NICE   | 54.66  |
| Q    | S15    | 12-2-21         | MICHAEL KENNETH & ROSETTA ANNETTE COZART                | 11.4   |
| T    | S16    | 12-2-12         | BERYL E. MASON  | 59.9   |
| U    | S17    | 12-2-13         | JAY S. BOOTH; DANIEL T. BOOTH & DJANE BETH OVERDORFF    | 100    |
|      | S18    | 12-2-14         | DAVID L. CUNNINGHAM                                     | 56.23  |
| W    | S19    | 12-2-14.2       | JOHN G. JR & GERALDINE M. ROGERS                        | 22.007 |
| X    | S20    | 12-2-14.1       | SAMMY J. GREATHOUSE JR. ; SAMMY J. GREATHOUSE SR. - L/E | 18.67  |
|      | S21    | 05-25-11.4      | EDWARD W. KLUG, ETUX                                    | 32.787 |
| Y    | S22    | 05-25-15        | ROBERT S. KELLER, ETAL                                  | 15.073 |
| Z    | S23    | 12-2-14.3       | QUENNA BENNETT  | 3.093  |
|      | S24    | 05-25-16.1      | DAVID L. CUNNINGHAM                                     | 6.34   |
|      | S25    | 05-25-16.2      | RODNEY J. LOY   | 1.087  |
| BB   | S26    | 05-26-12.1      | ALVIN F. JR. & KRISTA R. STONEKING                      | 2.011  |
| EE   | S27    | 05-25-17        | CRAIG & ASHLEY FERRELL                                  | 22.79  |
| DD   | S28    | 05-25-18        | JOSEPH JOHNSON, ETUX - LIFE                             | 37.746 |
| CC   | S29    | 05-26-11        | MARK A. YOHO  | 89.25  |
|      | S30    | 05-25-18.1      | PAMELA JOAN FERRELL, ET VIR                             | 2.491  |
|      | S31    | 05-25-19        | JOSEPH JOHNSON ET UX - LIFE                             | 1.973  |
| FF   | S32    | 05-26-8         | RICHARD J. OTTE   | 18.27  |
| GG   | S33    | 05-26-20        | RICHARD J. OTTE   | 4.2    |
|      | S34    | 05-23-11.5      | ZACHARY R. STEVEN                                       | 7      |
|      | S35    | 05-23-11.8      | ROY F. YOHO   | 2.25   |
|      | S36    | 05-23-11.3      | COLIN R. YOHO   | 11.29  |
|      | S37    | 05-23-11.4      | EVELYN L. HUDSON  | 10.879 |
|      | S38    | 05-23-13.1      | JAMES R. & PAMELA J. FERRELL                            | 0.7625 |
| JJ   | S39    | 05-23-13        | LINDA D. GREATHOUSE                                     | 14.24  |
| II   | S40    | 05-23-12        | MARK A. YOHO  | 3.05   |
| HH   | S41    | 05-23-9.1       | JOHN W. VAN ORDEN, ETUX                                 | 23.376 |
|      | S42    | 05-23-9.4       | JACKSON R. DAVIS, JR.                                   | 2.087  |
| KK   | S43    | 05-23-9.2       | LINDA D. GREATHOUSE                                     | 25.58  |
|      | S44    | 05-23-8         | CARL DAVID & SUZANNE L. GUSEMAN                         | 29.5   |
|      | S45    | 05-23-9.3       | LINDA D. GREATHOUSE                                     | 17.5   |
|      | S46    | 05-23-11.6      | T.H. EXPLORATION II, LLC                                | 0.094  |
|      | S47    | 05-23-11.2      | EVELYN HUDSON   | 1.154  |
|      | S48    | 05-23-11        | ROY F. YOHO   | 7      |
|      | S49    | 05-25-20.3      | JAMES A. & JO C. ESTEP                                  | 4.49   |
|      | S50    | 05-25-20.2      | JAMES M. ZAMBOTTI                                       | 1.347  |
|      | S51    | 05-25-20.1      | JAMES M. ZAMBOTTI                                       | 2.746  |
|      | S54    | 05-25-1         | MICHAEL L. MASON  | 35.43  |
|      | S55    | 05-25-14        | ROY F. YOHO   | 23     |
|      | S56    | 05-25-13.2      | DAVID A. KLUG   | 5.89   |
|      | S57    | 05-25-13        | WILLIAM M. FERDA, JR., ETAL                             | 16.014 |
|      | S58    | 05-25-13.4      | PARSONS CEMETERY  | 0.382  |
|      | S59    | 05-25-12.1      | KENT & BETTY MASON                                      | 15     |
|      | S60    | 05-25-11.1      | EDWARD W. & DIANNA KLUG                                 | 2.343  |
|      | S61    | 12-3-44         | JAMES A. & JO C. ESTEP                                  | 1.1    |
|      | S62    | 12-3-47         | WETZEL CO. EMERGENCY AMBULANCE                          | 0.5    |
|      | S63    | 12-3-49         | LOGAN & AMY TAYLOR                                      | 3.814  |
|      | S64    | 12-3-43         | ADAM W. FERRELL & BRITTANY M. LOY                       | 1.97   |
|      | S65    | 05-25-16        | CRAIG R. & ASHLEY FERRELL                               | 23.5   |
|      | S66    | 12-3-1          | JAMES W. KLUG   | 0.375  |

\* FORCED POOLED TRACTS ARE HIGHLIGHTED



P.S. 708 *David L Jackson*

| Tags | Number | Tax Map -Parcel         | Surface Owner  | Acres  |
|------|--------|-------------------------|--|--------|
|      | S67    | 12-3-4.5                | HAZEL M. BLAIR   | 0.451  |
|      | S68    | 12-3-4.6                | STEVEN P. WAYMAN   | 1.009  |
|      | S69    | 12-3-4.8                | ERIN HUBBS   | 0.621  |
|      | S70    | 12-3-4.3                | JOSEPH P. & BARBARA A. CAIN  | 3.619  |
|      | S71    | 12-3-2                  | ROBERT LEE & DIANA G. SMITH  | 2.48   |
|      | S72    | 12-3-3.1                | DIANA & ROBERT L. SMITH  | 15.78  |
|      | S73    | 12-3-4.2                | DEREK L. BAKER   | 5.21   |
|      | S74    | 12-3-3                  | ANITA LARELL SLOUGH  | 1.12   |
|      | S75    | 12-3-12                 | RODNEY DEAN JACKSON  | 3.625  |
|      | S76    | 12-3-48                 | RONALD W. & JULIE A. NICE  | 1      |
|      | S77    | 12-3-14                 | ROBERT W. BAXTER, FREDERICK J. BAXTER & ANN C. LINGER                              | 27     |
|      | S78    | 12-3-14.1               | MATTHEW D. HALL  | 13     |
|      | S79    | 12-3-13.1               | ZACHARY J. KIRKLAND  | 5      |
|      | S80    | 12-3-21.1               | LARRY J. & MARY ANN KIRKLAND   | 0.47   |
|      | S81    | 12-3-29                 | FRIEND V. ESTEP : RAYMOND F. ESTEP - L/E   | 2.9    |
|      | S82    | 12-3-30.4               | FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & JOAN ESTEP (RAYMOND ESTEP - L/E) | 81.82  |
|      | S83    | 12-3-30.2               | APRIL ROSE & DONALD ALLEN POSTLETHWAIT   | 1.67   |
|      | S84    | 12-3-30                 | MARY ROSE YOHO - L/E: APRIL ROSE POSTLETHWAIT                                      | 0.48   |
|      | S85    | 12-3-28                 | ANTIOCH CHURCH   | 1      |
|      | S86    | 12-3-45                 | ANTIOCH CHURCH   | 0.774  |
|      | S87    | 12-8-3                  | R. SHANE & KATHRYN GODDARD   | 31.13  |
|      | S88    | 12-3-30.3               | TIMOTHY L. SUMMERS   | 0.61   |
|      | S89    | 12-3-32                 | TIMOTHY L. SUMMERS   | 2.32   |
|      | S90    | 12-3-39                 | FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & JOAN ESTEP (RAYMOND ESTEP - L/E) | 4.69   |
|      | S91    | 12-3-32.1               | TIMOTHY L. & LE ANNA SUMMERS   | 1.78   |
|      | S92    | 12-3-39.1               | WILLIAM NICE   | 1.31   |
|      | S93    | 12-3-31                 | DOUGLAS & SUZANNE ESTEP  | 3.25   |
|      | S94    | 12-8-4.3                | BRADY G. & SHARON L. HOWELL  | 5.59   |
|      | S95    | 12-8-4.1                | MARY JOSEPHINE & JACOB WOODROW NICE  | 6.171  |
|      | S96    | 12-8-13                 | EDWARD C. & SANDRA K MURRINER  | 15     |
|      | S97    | 12-8-14                 | EDWARD C. & SANDRA K MURRINER  | 5.33   |
|      | S98    | 12-8-16.1               | BRENT A. & KIMBERLY J. EDDY  | 0.06   |
|      | S99    | 12-8-4.4                | CHARLES & BETTY HUGGINS  | 0.69   |
|      | S100   | 12-8-4.2                | BRENT A. & KIMBERLY J. EDDY  | 1.861  |
|      | S101   | 12-8-4                  | JACOB WOODROW & MARY JOSEPHINE NICE  | 20.893 |
|      | S102   | 12-8-21                 | EDUARDO C. & SONNY R. DEGUZMAN   | 11.51  |
|      | S103   | 12-8-21.1               | LINDA M. STOUT   | 15.26  |
|      | S104   | 12-8-22.1               | BARRY C. KIRKLAND  | 7.401  |
|      | S105   | 12-8-32.6               | CHARLES W. THOMAS JR.  | 1.309  |
|      | S106   | 12-8-32                 | CHARLES M. THOMAS, DAVID TODD & CINDY L. BATES                                     | 27.287 |
|      | S107   | 12-8-20.1               | PAUL J. BLAKE  | 1.5    |
|      | S108   | 12-8-20.9               | JOSHUA M. & COURTNEY R. NEFF   | 0.4    |
|      | S109   | 12-8-20.3               | PAUL J. BLAKE  | 0.25   |
|      | S110   | 12-8-20.8               | JOSHUA M. & COURTNEY R. NEFF   | 0.99   |
|      | S111   | 12-8-20.6               | JOHN G. & DEBRA D. THROCKMORTON  | 1.046  |
|      | S112   | 12-8-20.7               | RON JR. & SHANA CAMPBELL   | 5.44   |
|      | S113   | 12-8-18                 | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E                             | 6.4    |
|      | S114   | 12-7-33                 | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E                             | 5.75   |
|      | S115   | 12-7-32.1               | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E                             | 18     |
|      | S116   | 12-7-22.3               | TIMOTHY ROGER FERGUSON   | 0.239  |
|      | S117   | 12-7-22.2               | TIMOTHY ROGER FERGUSON   | 0.908  |
|      | S118   | 12-7-22.4               | WAYNE PAUL GODDARD   | 0.084  |
|      | S119   | 12-7-9                  | MICHAEL J. & ALENA R. FAYAD  | 22.526 |
|      | S120   | 12-7-9.1                | JAMES T. EDDY  | 17.47  |
|      | S121   | 12-7-22.1               | NANCY C. MURPHY - LE: KARI KIM CLARK   | 0.82   |
|      | S122   | 12-7-10                 | WAYNE PAUL GODDARD   | 1.5    |
|      | S123   | 12-2-22                 | MARY JOSEPHINE NICE  | 2.95   |
|      | S124   | 12-2-22.3               | DAVID L. & KIMBERLY L. NICE  | 1.65   |
|      | S125   | 12-2-20.2               | MICHAEL K. COZART  | 1.025  |
|      | S126   | 12-2-20.1               | SHIRLEY L. & KENNETH L. HAUGHT   | 1      |
|      | S127   | 12-2-20                 | MICHAEL K. & ROSETTA A. COZART   | 34.063 |
|      | S128   | 12-8-1.2                | JOSH GODDARD   | 1.81   |
|      | S129   | 12-7-8.1                | BRIAN & CHRISTINE L. NICE  | 7.628  |
|      | S130   | 12-7-8                  | MARK E. ELLER  | 1.012  |
|      | S131   | 12-7-7.5                | MARK E. ELLER  | 1.94   |
|      | S132   | 12-7-7.1                | MARK E. ELLER  | 1.41   |
|      | S133   | 12-2-25                 | MICHAEL K. & ROSETTA A. COZART   | 1.265  |
|      | S134   | 12-2-11.1               | BERYL E. MASON   | 1.7    |
|      | S135   | 12-2-9                  | LAURA RICHARDS COOK  | 77     |
|      | S136   | 12-2-10                 | LAURA RICHARDS COOK  | 95     |
|      | S137   | 12-2-5                  | CLIFFORD W. & ALBERTA B. JOHNSON   | 75.96  |
|      | S138   | 12-2-6                  | CLIFFORD W. & ALBERTA B. JOHNSON   | 36     |
|      | S139   | 12-3-46                 | CATHY A. PURPURA   | 0.514  |
|      | S140   | 05-26-13                | MARJORIE ANN STONEKING - LIFE  | 40     |
|      | S141   | 05-26-14                | THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST            | 27.56  |
|      | S142   | 05-26-10                | THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST            | 24.94  |
|      | S143   | 05-26-9                 | THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OLIVER TRUST            | 21.75  |
|      | S144   | 05-26-21                | RICHARD JOSEPH OTTE  | 1.25   |
|      | S145   | 05-23-14                | DOMINION ENERGY TRANSMISSION, INC.   | 59.5   |
|      | S146   | 12-3-46                 | CATHY A. PURPURA   | 3.242  |
|      | S147   | 12-8-1.2                | JOSH GODDARD   | 1.81   |
|      | S148   | 05-23-11.8              | ROY F. YOHO  | 2.25   |
|      | S149   | p/o 12-3-39 & 12-3-30.4 | DOUGLAS & SUZANNE ESTEP  | 0.145  |
|      | S150   | p/o 12-3-4.7 & 12-3-4.3 | JOSHUA D. LEMASTERS & ERIN LEMASTERS   | 3.602  |

10/21/2022



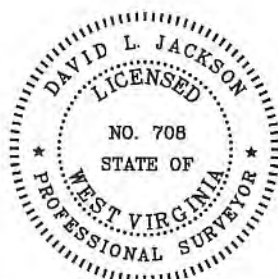
OPERATOR'S WELL #: ELMER N-14HU WELL PLAT  
 DISTRICT: Proctor PAGE 3 OF 4  
 COUNTY: Wetzel DATE: 9/26/2022  
 STATE: WV **MSD** REVISED DATE: 09/28/2022  
 API #: 47-103-03502



form ww6

**ELMER LEASE  
WELL N-14HU  
472.7041± ACRES**

| Lease ID          | TMP       | Tag | Grantor, Lessor, Etc.                         | Deed Book/Page |            |
|-------------------|-----------|-----|---|----------------|------------|
| 10*31435          | 12-8-15   | A   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-8-2    | B   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-8-1    | C   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31436          | 12-7-32   | D   | J R HUGGINS                                   | 56             | 465        |
| 10*21035          | 12-7-22   | E   | THOMAS E GARNER AND BILLIE J GARNER, ET AL    | 200A           | 385        |
| 10*31435          | 12-8-1.1  | F   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-7-13.1 | G   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-7-11   | H   | HENRY AND NANCY GARNER                        | 55             | 394        |
| **FORCE<br>POOL** | 12-2-22.2 | I   | THOMAS E GARNER, ET AL                        | 255A           | 816        |
| 10*31435          | 12-7-12   | J   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-3-26.1 | K   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-2-23.1 | L   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-2-23.3 | M   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*31435          | 12-2-23.4 | N   | HENRY AND NANCY GARNER                        | 55             | 394        |
| 10*21035          | 12-2-23   | O   | THOMAS E GARNER AND BILLIE J GARNER, ET AL    | 200A           | 385        |
| **FORCE<br>POOL** | 12-2-22.1 | P   | THOMAS E GARNER, ET AL                        | 166A           | 436        |
| 10*22571          | 12-2-21   | Q   | LINDA M YOHO, ET AL                           | 209A           | 281        |
| 10*22571          | 12-2-18   | R   | LINDA M YOHO, ET AL                           | 209A           | 281        |
| 10*21681          | 12-2-19   | S   | DOROTHY J HAAS, ET AL                         | 214A           | 358        |
| 10*18336          | 12-2-12   | T   | ED BROOME INC, ET AL                          | 198A           | 718        |
| 10*40304          | 12-2-13   | U   | DANIEL T BOOTH, ET AL                         | 292A           | 309        |
| 10*39463          | 12-3-4.7  | V   | J P COOPER ET AL                              | 56             | 245        |
| 10*18205          | 12-2-14.2 | W   | MELISSA PAINTER AND SHAUN PAINTER, ET AL      | 927<br>205A    | 639<br>891 |
| 10*27897          | 12-2-14.1 | X   | CAROL VASS, ET AL                             | 1063<br>232A   | 605<br>346 |
| 10*18205          | 5-25-15   | Y   | MELISSA PAINTER AND SHAUN PAINTER             | 927<br>205A    | 639<br>891 |
| 10*18216          | 5-25-15   | Y   | BRUCE EDWARD BAILEY JR AND DARA BAILEY, ET AL | 929            | 99         |
| 10*39461          | 12-2-14.3 | Z   | JAMES M PARSONS                               | 73             | 195        |
| 10*31441          | 5-26-12   | AA  | JASON AND S M PARSONS                         | 59             | 3          |
| 10*31441          | 5-26-12.1 | BB  | JASON AND S M PARSONS                         | 59             | 3          |
| 10*14786          | 5-26-11   | CC  | TWILA O WHIPKEY, ET AL                        | 799            | 61         |
| 10*14786          | 5-25-18   | DD  | TWILA O WHIPKEY, ET AL                        | 799            | 61         |
| 10*14786          | 5-25-17   | EE  | TWILA O WHIPKEY, ET AL                        | 799            | 61         |
| 10*14722          | 5-26-8    | FF  | HERBERT D MINOR, ET AL                        | 724            | 200        |
| 10*14722          | 5-26-20   | GG  | HERBERT D MINOR, ET AL                        | 724            | 200        |
| 10*17189          | 5-23-9.1  | HH  | ROBERT J HENRY                                | 716            | 197        |
| 10*14969          | 5-23-12   | II  | REBECCA S WORD, ET AL                         | 872            | 219        |
| 10*14786          | 5-23-13   | JJ  | TWILA O WHIPKEY, ET AL                        | 799            | 61         |
| 10*17189          | 5-23-9.2  | KK  | ROBERT J HENRY                                | 716            | 197        |



P.S.  
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*David L Jackson*

10/21/2022



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: ELMER N-14HU  
DISTRICT: Proctor  
COUNTY: Wetzel  
STATE: WV **MOD**  
API #: 47-103-03502

**WELL PLAT**  
**PAGE 4 OF 4**  
**DATE: 9/26/2022**  
**REVISED DATE:  
09/28/2022**

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

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

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

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

\*See attached pages

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

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

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

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Tug Hill Operating, LLC

By: Amy L. Morris *Amy L. Morris*

Its: Permitting Specialist - Appalachia Region

| Lease ID | TMP       | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc. | Royalty | Deed Book/Page | Assignment   | Assignment                       | Assignment   | Assignment  | Assignment  | Assignment   | Assignment   | Assignment  | Assignment   | Assignment   | Assignment                             | Assignment  |   |
|----------|-----------|-----|------------------------|-----------------------|---------|----------------|--|----------------------------------|--|---|---|--|--|---|--|--|--|---|---|
| 10*31435 | 12-8-15   | A   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55 394         | N/A  | N/A                              | N/A  | J A Phillips to South Penn Oil Company: 56/284  | South Penn Oil Company to South Penn Natural Gas Company: 33A/455   | South Penn Natural Gas Company to Dallis Snyder & Beren: 39A/33                        | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38                     | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92    | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |
| 10*31435 | 12-8-2    | B   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55 394         | N/A  | N/A                              | N/A  | J A Phillips to South Penn Oil Company: 56/284  | South Penn Oil Company to South Penn Natural Gas Company: 33A/455   | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38                     | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92    | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |
| 10*31436 | 12-7-32   | D   | J R HUGGINS            | J C TREES             | 1/8+    | 56 465         | J C Trees to Alvin C Spindler & Charles Gibbs Carter: 59/1 | J C Trees to D C Harkins: 67/626 | M L Benedum, D C Harkins, Alvin C Spindler, Charles Gibbs Carter & J C Trees to David Iseman: 67/627 | John W Donnan to John H Donnan, Sydney B Donnan, Alvan E Donnan & Smith N Whitworth, Trustees of John W Donnan Trust: 31A/425 | Sara Mays Spindler, Wm R Spindler, et ux, Sydney B Donnan, Smith Whitworth & John D Donnan, Trustees, David A Iseman et ux, Warren S Burchinal et ux, Eleanor Burchinal et ux & David A Burchinal to Ambrose Bradley: 31A/431 | Ralph M White, guardian of Jean Burchinal to Ambrose Bradley: 32A/153                  | H E Milliken, John R Conklin & Harry S Comklin personal representatives of the Est of J A Cummins to John H Robinson & George F Eagon: 41A/240 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin Jr: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 273A/865 |
| 10*31435 | 12-8-1.1  | F   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55 394         | N/A  | N/A                              | N/A  | J A Phillips to South Penn Oil Company: 56/284  | South Penn Oil Company to South Penn Natural Gas Company: 33A/455   | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38                     | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92    | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |
| 10*31435 | 12-7-13.1 | G   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55 394         | N/A  | N/A                              | N/A  | J A Phillips to South Penn Oil Company: 56/284  | South Penn Oil Company to South Penn Natural Gas Company: 33A/455   | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38                     | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92    | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |
| 10*31435 | 12-3-26.1 | K   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55 394         | N/A  | N/A                              | N/A  | J A Phillips to South Penn Oil Company: 56/284  | South Penn Oil Company to South Penn Natural Gas Company: 33A/455   | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38                     | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92    | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |
| 10*31435 | 12-2-23.1 | L   | HENRY AND NANCY GARNER | J A PHILLIPS          | 1/8+    | 55 394         | N/A  | N/A                              | N/A  | J A Phillips to South Penn Oil Company: 56/284  | South Penn Oil Company to South Penn Natural Gas Company: 33A/455   | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38                     | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92    | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |

| Lease ID       | TMP       | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc.    | Royalty | Deed Book/Page | Assignment  | Assignment     | Assignment | Assignment                                     | Assignment  | Assignment   | Assignment   | Assignment  | Assignment  | Assignment   | Assignment  | Assignment  |   |     |
|----------------|-----------|-----|--|--------------------------|---------|----------------|---|----------------|------------|--|---|--|--|---|---|--|---|---|---|-----|
| 10*31435       | 12-2-23.4 | N   | HENRY AND NANCY GARNER   | J A PHILLIPS             | 1/8+    | 55 394         | N/A   | N/A            | N/A        | J A Phillips to South Penn Oil Company: 55/284 | South Penn Oil Company to South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241                                 | Kathryn C Reed to Carl Perkins: 55A/54  | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9                 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| **FORCE POOL** | 12-2-22.3 | F   | THOMAS E GARNER  | STONE ENERGY CORPORATION | 1/8+    | 166A 236       | Stone Energy Corp to EQT Production Company: 183A/305 | **FORCE POOL** |            |  |   |  |  |   |   |  |   |   |   |     |
| **FORCE POOL** | 12-2-22.1 | F   | LARRY D GARNER   | STONE ENERGY CORPORATION | 1/8+    | 166A 238       | Stone Energy Corp to EQT Production Company: 183A/305 | **FORCE POOL** |            |  |   |  |  |   |   |  |   |   |   |     |
| 10*22571       | 12-2-18   | R   | LINDA M YOHO   | TH EXPLORATION LLC       | 1/8+    | 209A 281       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23019       | 12-2-18   | R   | JODI LYNN PAULLEY  | TH EXPLORATION LLC       | 1/8+    | 209A 223       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23186       | 12-2-18   | R   | RODNEY C BAXTER AND MARY SUE BAXTER  | TH EXPLORATION LLC       | 1/8+    | 210A 401       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23151       | 12-2-18   | R   | MARY JO KIBBEE AND VINCENT KIBBEE II   | TH EXPLORATION LLC       | 1/8+    | 210A 613       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23297       | 12-2-18   | R   | JUDITH A WILLIAMS  | TH EXPLORATION LLC       | 1/8+    | 211A 228       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23745       | 12-2-18   | R   | JENNIFER ANN YOHO  | TH EXPLORATION LLC       | 1/8+    | 213A 699       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*26900       | 12-2-18   | R   | NINA K ALTHOFF AND RONALD D ALTHOFF  | TH EXPLORATION LLC       | 1/8+    | 225A 778       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*29962       | 12-2-18   | R   | STARIA K RICHMOND  | TH EXPLORATION LLC       | 1/8+    | 247A 282       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*30216       | 12-2-18   | R   | STONE HILL MINERALS HOLDINGS LLC   | TH EXPLORATION LLC       | 1/8+    | 254A 335       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*39263       | 12-2-18   | R   | JANE ELLEN MARCUM  | TH EXPLORATION LLC       | 1/8+    | 261A 124       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*39276       | 12-2-18   | R   | THE PYETT TRUST VICK M FERRIS TRUSTEE  | TH EXPLORATION LLC       | 1/8+    | 261A 880       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*39431       | 12-2-18   | R   | TODD J COZART AND HEATHER R COZART   | TH EXPLORATION LLC       | 1/8+    | 269A 616       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*39458       | 12-2-18   | R   | KENNA S SMOYER   | TH EXPLORATION LLC       | 1/8+    | 269A 618       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*39668       | 12-2-18   | R   | MICHAEL K COZART AND ROSETTA A COZART  | TH EXPLORATION LLC       | 1/8+    | 212A 919       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*21681       | 12-2-19   | S   | DOROTHY J HAAS   | TH EXPLORATION LLC       | 1/8+    | 214A 358       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*22229       | 12-2-19   | S   | MURIEL A MILLER  | TH EXPLORATION LLC       | 1/8+    | 204A 150       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*22320       | 12-2-19   | S   | JOHN P SNYDER  | TH EXPLORATION LLC       | 1/8+    | 204A 146       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*22692       | 12-2-19   | S   | HERBERT L MILLER AND BRENDA S MILLER   | TH EXPLORATION LLC       | 1/8+    | 209A 295       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23007       | 12-2-19   | S   | JOHN M PARSONS & ANTOINETTE L COSTANTINO   | TH EXPLORATION LLC       | 1/8+    | 209A 287       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23029       | 12-2-19   | S   | HANIMETT LAND & MINERALS LLC SAMUEL C HANIMETT MANAGING MEMBER                     | TH EXPLORATION LLC       | 1/8+    | 209A 285       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23512       | 12-2-19   | S   | WYMAN A PARSONS  | TH EXPLORATION LLC       | 1/8+    | 212A 59        | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23697       | 12-2-19   | S   | RICHARD ALLEN FONNER AND LINDA M FONNER  | TH EXPLORATION LLC       | 1/8+    | 212A 521       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23719       | 12-2-19   | S   | BRENDA S FONNER  | TH EXPLORATION LLC       | 1/8+    | 213A 410       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23797       | 12-2-19   | S   | FREDERICK R FONNER AND PENELOPE G FONNER   | TH EXPLORATION LLC       | 1/8+    | 213A 703       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*23824       | 12-2-19   | S   | JAMES II PARSONS JR  | TH EXPLORATION LLC       | 1/8+    | 215A 262       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*24004       | 12-2-19   | S   | JOHN E FONNER AND MICHELE D FONNER   | TH EXPLORATION LLC       | 1/8+    | 215A 437       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*24148       | 12-2-19   | S   | ROY C PARSONS  | TH EXPLORATION LLC       | 1/8+    | 212A 517       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*24175       | 12-2-19   | S   | THOMAS J FONNER  | TH EXPLORATION LLC       | 1/8+    | 214A 71        | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*24775       | 12-2-19   | S   | 2011 WILLIAM F ROWLAND & CONNIE J ROWLAND IRREVOCABLE TRUST DATED OCTOBER 28, 2011 | TH EXPLORATION LLC       | 1/8+    | 220A 289       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*25009       | 12-2-19   | S   | FRANCES E ALLOWAY  | TH EXPLORATION LLC       | 1/8+    | 220A 887       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*26923       | 12-2-19   | S   | CHRISTOPHER TILLMAN AND KELLY L TILLMAN  | TH EXPLORATION LLC       | 1/8+    | 225A 771       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*26986       | 12-2-19   | S   | ROBERT FRANKLIN II FONNER AND KARYN FONNER   | TH EXPLORATION LLC       | 1/8+    | 226A 407       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*27309       | 12-2-19   | S   | JOHN IHNATOLYA AND CHARLOTTE IHNATOLYA   | TH EXPLORATION LLC       | 1/8+    | 229A 390       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*27548       | 12-2-19   | S   | BECKY LANE LLC   | TH EXPLORATION LLC       | 1/8+    | 232A 716       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*27549       | 12-2-19   | S   | BETTY JANE RICHARDSON FONNER   | TH EXPLORATION LLC       | 1/8+    | 232A 720       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*27963       | 12-2-10   | S   | STONE HILL MINERALS HOLDINGS LLC   | TH EXPLORATION LLC       | 1/8+    | 232A 399       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*28038       | 12-2-19   | S   | CHRISTINE C CONNOR AND WILLIAM KYLE CONNOR   | TH EXPLORATION LLC       | 1/8+    | 234A 623       | N/A   | N/A            | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A |
| 10*31435       | 12-2-19   | S   | HENRY AND NANCY GARNER   | J A PHILLIPS             | 1/8+    | 55 394         | N/A   | N/A            | N/A        | J A Phillips to South Penn Oil Company: 56/284 | South Penn Oil Company to South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241                                 | Kathryn C Reed to Carl Perkins: 55A/54  | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9                 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| 10*39464       | 12-2-19   | S   | ROBERT AND SARAH J COFFIELD  | J A PHILLIPS             | 1/8+    | 55 216         | N/A   | N/A            | N/A        | J A Phillips to South Penn Oil Company: 55/235 | South Penn Oil Company to Hope Natural Gas Company: 3A/227        | Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387                      | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69   | Consolidated Gas Transmission Corp to CNX Development Company: 67A/452  | Merger - CNX Development Company merged with and into CNX Producing Company Eff. 1/1/1991   | Name Change - CNX Producing Company changed name into Dominion Exploration & Producing Inc - 5/10/2000 | Merger - Dominion Exploration & Production Inc merged with and into Consol Gas Company: CB 13/108 | Merger - Consol Gas Company merged with and into CNX Gas Company LLC: MB 96/307 | CNX Gas Company LLC to TH Exploration LLC: 270A/479   |     |

| Lease ID | TMP       | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc.  | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment                                     | Assignment   | Assignment  | Assignment   | Assignment   | Assignment  | Assignment  | Assignment  | Assignment  |   |
|----------|-----------|-----|--|------------------------|---------|----------------|------------|------------|------------|--|--|---|--|--|---|---|---|---|---|
| 10*39465 | 12-2-19   | S   | ROBERT AND SARAH J COFFIELD                                  | J A PHILLIPS           | 1/8+    | 55 212         | N/A        | N/A        | N/A        | J A Phillips to South Penn Oil Company: 55/235 | South Penn Oil Company to Hope Natural Gas Company: 9A/227 | Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387 | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69 | Consolidated Gas Transmission Corp to CNG Development Company: 67A/452     | Merger - CNG Development Company merged with and into CNG Producing Company Eff. 1/1/1991 | Name Change - CNG Producing Company changed name into Dominion Exploration & Producing Inc. - 5/10/2000 | Merger - Dominion Exploration & Production Inc merger with and into Consol Gas Company: CB 13/108 | Merger - Consol Gas Company merged with and into CNX Gas Company LLC: MB 96/307 | CNX Gas Company LLC to TH Exploration LLC: 270A/479 |
| 10*18336 | 12-2-12   | T   | ED BROOME INC  | TH EXPLORATION LLC     | 1/8+    | 198A 718       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*22224 | 12-2-12   | T   | HAMMETT LAND & MINERALS LLC SAMUEL C HAMMETT MANAGING MEMBER | TH EXPLORATION LLC     | 1/8+    | 204A 178       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*22229 | 12-2-12   | T   | MURIEL A MILLER  | TH EXPLORATION LLC     | 1/8+    | 204A 150       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*22230 | 12-2-12   | T   | JOHN P SNYDER  | TH EXPLORATION LLC     | 1/8+    | 204A 146       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23007 | 12-2-12   | T   | JOHN M PARSONS & ANTOINETTE L COSTANTINO                     | TH EXPLORATION LLC     | 1/8+    | 209A 287       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23512 | 12-2-12   | T   | WIVIAN A PARSONS   | TH EXPLORATION LLC     | 1/8+    | 212A 59        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23824 | 12-2-12   | T   | JAMES H PARSONS JR   | TH EXPLORATION LLC     | 1/8+    | 215A 262       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*24100 | 12-2-12   | T   | ROME PRESBYTERIAN CHURCH OF PROCTORVILLE                     | TH EXPLORATION LLC     | 1/8+    | 216A 422       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*24148 | 12-2-12   | T   | ROY C PARSONS  | TH EXPLORATION LLC     | 1/8+    | 212A 517       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*24376 | 12-2-12   | T   | WD LEMON   | TH EXPLORATION LLC     | 1/8+    | 218A 504       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*24472 | 12-2-12   | T   | ROY FRIEND YOHO  | TH EXPLORATION LLC     | 1/8+    | 219A 3         | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*25358 | 12-2-12   | T   | MASON A BEGLEY AND DENINA M BEGLEY                           | TH EXPLORATION LLC     | 1/8+    | 222A 468       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*25720 | 12-2-12   | T   | CATHRA LYNN BEGLEY   | TH EXPLORATION LLC     | 1/8+    | 223A 526       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*26574 | 12-2-12   | T   | JACQUELEIN R KOSKI   | TH EXPLORATION LLC     | 1/8+    | 224A 505       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*26575 | 12-2-12   | T   | ALANNA L HAMILTON  | TH EXPLORATION LLC     | 1/8+    | 224A 502       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*26942 | 12-2-12   | T   | SHERRY L FEE   | TH EXPLORATION LLC     | 1/8+    | 226A 412       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27146 | 12-2-12   | T   | JULIE P SIMMONS AND DOUGLAS A SIMMONS                        | TH EXPLORATION LLC     | 1/8+    | 228A 189       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27149 | 12-2-12   | T   | NEL D PATTERSON JR & THERESA PATTERSON                       | TH EXPLORATION LLC     | 1/8+    | 228A 186       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27310 | 12-2-12   | T   | CLARK E PATTERSON AND MALISSA D PATTERSON                    | TH EXPLORATION LLC     | 1/8+    | 228A 192       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*28421 | 12-2-12   | T   | ROBERT G JEWELL  | TH EXPLORATION LLC     | 1/8+    | 236A 838       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*29189 | 12-2-12   | T   | DWAYNE EARL BEGLEY   | TH EXPLORATION LLC     | 1/8+    | 245A 371       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*29327 | 12-2-12   | T   | MICHAEL V PARSONS AND LINDA D PARSONS                        | TH EXPLORATION LLC     | 1/8+    | 285A 567       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*39899 | 12-2-12   | T   | EDWARD A BROOME  | TH EXPLORATION LLC     | 1/8+    | 273A 876       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*40304 | 12-2-13   | U   | DANIEL T BOOTH   | TH EXPLORATION LLC     | 1/8+    | 292A 309       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*40490 | 12-2-13   | U   | DIANE BETH OVERDORFF   | TH EXPLORATION LLC     | 1/8+    | 292A 305       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*40455 | 12-2-13   | U   | ERIC J BOOTH   | TH EXPLORATION LLC     | 1/8+    | 292A 307       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27897 | 12-2-14.1 | X   | CAROL VASS   | TH EXPLORATION LLC     | 1/8+    | 232A 346       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*39461 | 12-2-14.1 | X   | JAMES M PARSONS  | SOUTH PENN OIL COMPANY | 1/8+    | 73 195         | N/A        | N/A        | N/A        | N/A  | N/A  | South Penn Oil Company to Hope Natural Gas Company: 9A/227        | Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387          | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69 | Consolidated Gas Transmission Corp to CNG Development Company: 67A/453                    | Name Change - CNG Producing Company changed name into Dominion Exploration & Producing Inc. - 5/10/2000 | Merger - Dominion Exploration & Production Inc merger with and into Consol Gas Company: CB 13/108 | Merger - Consol Gas Company merged with and into CNX Gas Company LLC: MB 96/307 | CNX Gas Company LLC to TH Exploration LLC: 270A/479 |
| 10*18205 | 5-25-15   | Y   | MELISSA PAINTER AND SHAUN PAINTER                            | TH EXPLORATION LLC     | 1/8+    | 205A 891       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*18216 | 5-25-15   | Y   | BRUCE EDWARD BAILEY JR AND DARA BAILEY                       | TH EXPLORATION LLC     | 1/8+    | 929 99         | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*19484 | 5-25-15   | Y   | FREDRIC & BETTY RICHTER                                      | TH EXPLORATION LLC     | 1/8+    | 941 235        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*19485 | 5-25-15   | Y   | ELIZABETH A HARTLE   | TH EXPLORATION LLC     | 1/8+    | 941 233        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*19643 | 5-25-15   | Y   | PATRICIA LOUISE CROW AND HOY GLENN CROW                      | TH EXPLORATION LLC     | 1/8+    | 944 101        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23349 | 5-25-15   | Y   | LYNN ELLEN BARCUS AND PAUL E BARCUS JR                       | TH EXPLORATION LLC     | 1/8+    | 205A 877       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23403 | 5-25-15   | Y   | JAN LEA O'DONNELL AND KELLY O'DONNELL                        | TH EXPLORATION LLC     | 1/8+    | 988 439        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23426 | 5-25-15   | Y   | STEVEN L & CAROL J NEWMAN                                    | TH EXPLORATION LLC     | 1/8+    | 211A 335       | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23702 | 5-25-15   | Y   | BRAD EYNON   | TH EXPLORATION LLC     | 1/8+    | 988 436        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23836 | 5-25-15   | Y   | JON NEWMAN & SUSAN NEWMAN                                    | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27186 | 5-25-15   | Y   | LAURA J MAY AND ROGER A MAY                                  | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27298 | 5-25-15   | Y   | ROBERT M MCCARDLE & NANCY R MCCARDLE                         | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27435 | 5-25-15   | Y   | ROHN J BOWERS MARTIN   | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27439 | 5-25-15   | Y   | GERALD H COOPER  | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27444 | 5-25-15   | Y   | GREGORY T COOPER AND SUSAN COOPER                            | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27521 | 5-25-15   | Y   | GASPARE A INGRASSIELINO                                      | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27569 | 5-25-15   | Y   | ROBERT LOHR  | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27897 | 5-25-15   | Y   | CAROL VASS   | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27898 | 5-25-15   | Y   | PAUL G FOX AND CYNTHIA G FOX                                 | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27959 | 5-25-15   | Y   | STONE HILL MINERALS HOLDINGS LLC                             | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27963 | 5-25-15   | Y   | STONE HILL MINERALS HOLDINGS LLC                             | TH EXPLORATION LLC     | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |

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|----------|---------|-----|---|----------------------------|--------|----------------|------------|------------|------------|------------|------------|--|---|--|--|---|---|---|--|--|--|--|
| 10*39461 | 5-25-15 | Y   | JAMES M PARSONS                                 | SOUTH PENN OIL COMPANY     | 1/8+   | 73 195         | N/A        | N/A        | N/A        | N/A        | N/A        | South Penn oil Company to Hope Natural Gas Company: 9A/227 | Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387 | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69 | Consolidated Gas Transmission Corp to CNG Development Company: 67A/453 | Name Change - CNG Producing Company changed name into Dominion Exploration & Producing Inc. - 5/10/2000 | Merger - Dominion Exploration & Production Inc merged with and into Consol Gas Company LLC: CB 13/108                             | Merger - Consol Gas Company merged with and into CNX Gas Company LLC: MB 96/307 | CNX Gas Company LLC to TH Exploration LLC: 270A/479                        |  |  |  |
| 10*31441 | 5-26-12 | AA  | JASON AND S M PARSONS                           | SOUTH PENN OIL COMPANY     | 1/8+   | 59 3           | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | South Penn oil Company to Tri-State Gas Company: 80/150   | Tri-State Gas Company to The Manufacturers Light & Heat Company: 244/373  | The Manufacturers Light & Heat Company to Hundred Gas Company: 401/89           | Duane M Snider dba Hundred Gas Company to Carl D Perkins: 451/168          | Carl D Perkins to Perkins Oil & Gas Inc to TH Exploration LLC: 46/190                            |  |  |
| 10*14786 | 5-26-11 | CC  | TWILA O WHIPKEY                                 | GASTAR EXPLORATION USA INC | 1/8+   | 799 61         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1                     | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9  | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |  |
| 10*14792 | 5-26-11 | CC  | TIMOTHY YOHO                                    | GASTAR EXPLORATION USA INC | 1/8+   | 799 536        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1                     | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9  | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |  |
| 10*14797 | 5-26-11 | CC  | ORVILLE YOUNG                                   | GASTAR EXPLORATION USA INC | 1/8+   | 800 598        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1                     | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9  | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |  |
| 10*14822 | 5-26-11 | CC  | ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE | GASTAR EXPLORATION USA INC | 1/8+   | 876 463        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144                    | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9  | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |  |
| 10*14823 | 5-26-11 | CC  | SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE  | GASTAR EXPLORATION USA INC | 1/8+   | 876 459        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144                    | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9  | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |  |
| 10*14969 | 5-26-11 | CC  | REBECCA S WORD                                  | GASTAR EXPLORATION USA INC | 1/8+   | 872 219        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/119                    | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9  | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |  |
| 10*14970 | 5-26-11 | CC  | GRACE EXLINE                                    | GASTAR EXPLORATION USA INC | 1/8+   | 872 623        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/119                    | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9  | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |  |
| 10*17195 | 5-26-11 | CC  | PATRICIA HARTMAN                                | GASTAR EXPLORATION USA INC | 1/8+   | 695 317        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17196 | 5-26-11 | CC  | DELBERT R. MONTGOMERY                           | GASTAR EXPLORATION USA INC | 1/8+   | 695 311        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17197 | 5-26-11 | CC  | GLORIA J. SIMMONS HAROLD SIMMONS                | GASTAR EXPLORATION USA INC | 1/8+   | 695 313        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17199 | 5-26-11 | CC  | PAMELA L DRAZIC AND JEFFREY DRAZIC              | GASTAR EXPLORATION USA INC | 1/8+   | 695 315        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |

| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.                           | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment   | Assignment  | Assignment  | Assignment   | Assignment  |  |  |
|----------|---------|-----|---|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|--|---|---|--|---|--|--|
| 10*17200 | 5-26-11 | CC  | STEPHANIE L BATES                               | GASTAR EXPLORATION USA INC | 1/8+    | 697 156        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17201 | 5-26-11 | CC  | DENISE A GALE                                   | GASTAR EXPLORATION USA INC | 1/8+    | 697 395        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17202 | 5-26-11 | CC  | JANE GALE                                       | GASTAR EXPLORATION USA INC | 1/8+    | 697 385        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17203 | 5-26-11 | CC  | BARRY RAY MOORE                                 | GASTAR EXPLORATION USA INC | 1/8+    | 697 387        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17204 | 5-26-11 | CC  | CLARENCE RICHARD ZESIGER & MARY ZESIGER         | GASTAR EXPLORATION USA INC | 1/8+    | 697 391        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17206 | 5-26-11 | CC  | M VIRGINIA & EDWARD C MARSH                     | GASTAR EXPLORATION USA INC | 1/8+    | 697 399        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17207 | 5-26-11 | CC  | DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR. | GASTAR EXPLORATION USA INC | 1/8+    | 697 389        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17210 | 5-26-11 | CC  | MARILYN NOEL                                    | GASTAR EXPLORATION USA INC | 1/8+    | 697 393        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17211 | 5-26-11 | CC  | GARY WAYNE ZESIGER & VITORINA ZESIGER           | GASTAR EXPLORATION USA INC | 1/8+    | 697 397        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and Into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |

| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.                                    | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment   | Assignment  | Assignment  | Assignment   | Assignment   |  |  |
|----------|---------|-----|--|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|--|---|---|--|--|--|--|
| 10*17212 | 5-26-11 | CC  | DARRELL NEWLAND LYDIA NEWLAND                            | GASTAR EXPLORATION USA INC | 1/8+    | 697 158        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17213 | 5-26-11 | CC  | CAROL DEEN GARDNER                                       | GASTAR EXPLORATION USA INC | 1/8+    | 697 154        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17822 | 5-26-11 | CC  | ANTOINE E GERAUD   | TH EXPLORATION LLC         | 1/8+    | 943 560        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18114 | 5-26-11 | CC  | DARRELL NEWLAND  | TH EXPLORATION LLC         | 1/8+    | 927 66         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18115 | 5-26-11 | CC  | DONALD R NEWLAND AND SUZANNE NEWLAND                     | TH EXPLORATION LLC         | 1/8+    | 927 73         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18275 | 5-26-11 | CC  | BETTY JEAN NEELY   | TH EXPLORATION LLC         | 1/8+    | 929 60         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18366 | 5-26-11 | CC  | MARY LOU WILSON AND STANLEY D WILSON                     | TH EXPLORATION LLC         | 1/8+    | 931 311        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18369 | 5-26-11 | CC  | MICHAEL WILSON AIF                                       | TH EXPLORATION LLC         | 1/8+    | 931 303        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18370 | 5-26-11 | CC  | CRAIG ALAN YOHO AND DONNA M YOHO                         | TH EXPLORATION LLC         | 1/8+    | 931 300        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18379 | 5-26-11 | CC  | SAMUEL D YOHO  | TH EXPLORATION LLC         | 1/8+    | 932 439        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18541 | 5-26-11 | CC  | DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST | TH EXPLORATION LLC         | 1/8+    | 932 439        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*18818 | 5-26-11 | CC  | PATRICK P MCHENRY  | TH EXPLORATION LLC         | 1/8+    | 933 649        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19486 | 5-26-11 | CC  | LUCILLE R MCHENRY  | TH EXPLORATION LLC         | 1/8+    | 937 624        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19540 | 5-26-11 | CC  | BARBARA ANN MAYNARD                                      | TH EXPLORATION LLC         | 1/8+    | 941 229        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19543 | 5-26-11 | CC  | ERICA M MASON  | TH EXPLORATION LLC         | 1/8+    | 942 53         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19640 | 5-26-11 | CC  | ROBERT I BONAR SR  | TH EXPLORATION LLC         | 1/8+    | 942 61         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19641 | 5-26-11 | CC  | MARGARET F RICHMOND DEBORAH FEDOR POA                    | TH EXPLORATION LLC         | 1/8+    | 944 120        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19650 | 5-26-11 | CC  | BRAFORD D LOWERY & DEBORAH LOWERY                        | TH EXPLORATION LLC         | 1/8+    | 944 122        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19652 | 5-26-11 | CC  | CLAUDIA LOWERY MALLOY                                    | TH EXPLORATION LLC         | 1/8+    | 944 99         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19657 | 5-26-11 | CC  | JACK R HAMMERS   | TH EXPLORATION LLC         | 1/8+    | 944 108        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19732 | 5-26-11 | CC  | JANET LEE SPARKS   | TH EXPLORATION LLC         | 1/8+    | 944 469        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19858 | 5-26-11 | CC  | CARL M MCHENRY AND PAMELA MCHENRY                        | TH EXPLORATION LLC         | 1/8+    | 944 188        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19903 | 5-26-11 | CC  | JAMES MICHAEL YOHO                                       | TH EXPLORATION LLC         | 1/8+    | 945 442        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*19996 | 5-26-11 | CC  | PAUL F HAMMERS   | TH EXPLORATION LLC         | 1/8+    | 948 236        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21073 | 5-26-11 | CC  | CHARLES D WOOD   | TH EXPLORATION LLC         | 1/8+    | 947 589        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21074 | 5-26-11 | CC  | ARLITH R ROSE AND TOMMY E ROSE                           | TH EXPLORATION LLC         | 1/8+    | 951 608        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21419 | 5-26-11 | CC  | MALCOLM E WOOD AND JOAN J WOOD                           | TH EXPLORATION LLC         | 1/8+    | 951 610        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21431 | 5-26-11 | CC  | SHAWN M WOOD   | TH EXPLORATION LLC         | 1/8+    | 952 190        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21436 | 5-26-11 | CC  | DAVINE HUFFMAN AND CHARLES HUFFMAN                       | TH EXPLORATION LLC         | 1/8+    | 957 59         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21439 | 5-26-11 | CC  | GARY WAYNE ZESIGER & VITORINA ZESIGER                    | TH EXPLORATION LLC         | 1/8+    | 957 57         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21469 | 5-26-11 | CC  | CECLIA D NEWLAND   | TH EXPLORATION LLC         | 1/8+    | 957 55         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21471 | 5-26-11 | CC  | M VIRGINIA & EDWARD C MARSH                              | TH EXPLORATION LLC         | 1/8+    | 957 53         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21620 | 5-26-11 | CC  | KIMBERLY S DENNY AND JAMES E DENNY                       | TH EXPLORATION LLC         | 1/8+    | 957 244        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21621 | 5-26-11 | CC  | RICHARD ROSS WILSON                                      | TH EXPLORATION LLC         | 1/8+    | 960 190        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21658 | 5-26-11 | CC  | ROBERT CRAIG MONTGOMERY AND CYNTHIA R MONTGOMERY         | TH EXPLORATION LLC         | 1/8+    | 959 496        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21659 | 5-26-11 | CC  | MONTGOMERY   | TH EXPLORATION LLC         | 1/8+    | 959 494        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21660 | 5-26-11 | CC  | MARILYN NOEL   | TH EXPLORATION LLC         | 1/8+    | 959 490        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21830 | 5-26-11 | CC  | CLARENCE RICHARD ZESIGER & MARY ZESIGER                  | TH EXPLORATION LLC         | 1/8+    | 958 392        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21831 | 5-26-11 | CC  | DEBORAH BLOUGH   | TH EXPLORATION LLC         | 1/8+    | 958 390        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21834 | 5-26-11 | CC  | PAMELA L DRAZIC AND JEFFREY DRAZIC                       | TH EXPLORATION LLC         | 1/8+    | 960 200        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*21947 | 5-26-11 | CC  | MARISSA MASON  | TH EXPLORATION LLC         | 1/8+    | 966 122        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22007 | 5-26-11 | CC  | MATTHEW MASON  | TH EXPLORATION LLC         | 1/8+    | 960 204        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22008 | 5-26-11 | CC  | GEORGE DANIEL KRUGER                                     | TH EXPLORATION LLC         | 1/8+    | 960 101        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22025 | 5-26-11 | CC  | JILL A BECK  | TH EXPLORATION LLC         | 1/8+    | 965 59         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22031 | 5-26-11 | CC  | WALLACE LYNN WENDEL                                      | TH EXPLORATION LLC         | 1/8+    | 959 492        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22032 | 5-26-11 | CC  | DEBORAH K KLIMASZEWSKI AND FRANK KLIMASZEWSKI            | TH EXPLORATION LLC         | 1/8+    | 959 304        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22106 | 5-26-11 | CC  | COLIN R YOHO AND NORMA L YOHO                            | TH EXPLORATION LLC         | 1/8+    | 953 304        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22129 | 5-26-11 | CC  | MARK EUGENE YOHO & MARY YOHO                             | TH EXPLORATION LLC         | 1/8+    | 960 544        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22137 | 5-26-11 | CC  | PHILIP YOHO AND PATRICIA YOHO                            | TH EXPLORATION LLC         | 1/8+    | 960 535        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22285 | 5-26-11 | CC  | JOANNE E RAY   | TH EXPLORATION LLC         | 1/8+    | 960 537        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22324 | 5-26-11 | CC  | BARRY RAY MOORE  | TH EXPLORATION LLC         | 1/8+    | 961 643        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22334 | 5-26-11 | CC  | JANICE M HALDENSCHEILT                                   | TH EXPLORATION LLC         | 1/8+    | 961 459        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22441 | 5-26-11 | CC  | CONNIE L NEELY   | TH EXPLORATION LLC         | 1/8+    | 961 466        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22510 | 5-26-11 | CC  | DONALD JAMES WILSON AND SANDY L WILSON                   | TH EXPLORATION LLC         | 1/8+    | 962 193        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22561 | 5-26-11 | CC  | JOHN BRYANT  | TH EXPLORATION LLC         | 1/8+    | 962 540        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22562 | 5-26-11 | CC  | EDWIN NELSON WOOD  | TH EXPLORATION LLC         | 1/8+    | 963 637        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22563 | 5-26-11 | CC  | APRIL ROSE POSTLETHWAIT                                  | TH EXPLORATION LLC         | 1/8+    | 963 646        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22568 | 5-26-11 | CC  | DONNA V YOHO   | TH EXPLORATION LLC         | 1/8+    | 964 432        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
| 10*22585 | 5-26-11 | CC  | MARY ROSE YOHO   | TH EXPLORATION LLC         | 1/8+    | 968 200        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
|          |         |     | HAROLD C SIMMONS   | TH EXPLORATION LLC         | 1/8+    | 966 100        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
|          |         |     | KIMBERLY D STRAUCH                                       | TH EXPLORATION LLC         | 1/8+    | 966 522        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |
|          |         |     | CYNTHIA L CHICK  | TH EXPLORATION LLC         | 1/8+    | 966 102        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  |



| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment  | Assignment  | Assignment   | Assignment  | Assignment  | Assignment  |  |  |
|----------|---------|-----|--|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|---|---|--|---|---|---|--|--|
| 10*22718 | 5-26-11 | CC  | WILLIAM R RICHMOND AND CONNIE S RICHMOND   | TH EXPLORATION LLC         | 1/8+    | 963 389        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*23042 | 5-26-11 | CC  | MARK A YOHO  | TH EXPLORATION LLC         | 1/8+    | 1012 191       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*23372 | 5-26-11 | CC  | DEWEY A MILICIA  | TH EXPLORATION LLC         | 1/8+    | 1008 320       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*23373 | 5-26-11 | CC  | DANA MILICIA HUMPHREYS   | TH EXPLORATION LLC         | 1/8+    | 988 429        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*23446 | 5-26-11 | CC  | NICOLETTA MILICIA BLOODWORTH   | TH EXPLORATION LLC         | 1/8+    | 1008 316       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*23669 | 5-26-11 | CC  | LINDA K TOTTEN AND JERRY STEPHEN TOTTEN  | TH EXPLORATION LLC         | 1/8+    | 1010 358       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*24003 | 5-26-11 | CC  | CHARLES SIBURT AND PAULA SIBURT  | TH EXPLORATION LLC         | 1/8+    | 1020 189       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*24291 | 5-26-11 | CC  | MARY MARTHA BELLE DOYLE  | TH EXPLORATION LLC         | 1/8+    | 1024 285       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*24491 | 5-26-11 | CC  | DENISE A GALE  | TH EXPLORATION LLC         | 1/8+    | 1008 324       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*24890 | 5-26-11 | CC  | DEBRA JANE GALE  | TH EXPLORATION LLC         | 1/8+    | 1021 122       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*25065 | 5-26-11 | CC  | COLBY G WOOD   | TH EXPLORATION LLC         | 1/8+    | 1027 103       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*25066 | 5-26-11 | CC  | RODGER A HENDERSON JR  | TH EXPLORATION LLC         | 1/8+    | 1027 97        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*25627 | 5-26-11 | CC  | CHESTNUT HOLDINGS INC  | TH EXPLORATION LLC         | 1/8+    | 1034 548       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   |  |  |
| 10*27078 | 5-26-11 | CC  | CECLIA D NEWLAND   | GASTAR EXPLORATION USA INC | 1/8+    | 697 381        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC: 23/353 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110   | Statoll USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoll USA Onshore Properties Inc chanded its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141  | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |  |
| 10*27085 | 5-26-11 | CC  | DAPHNE HUFFMAN AND CHARLES HUFFMAN   | GASTAR EXPLORATION USA INC | 1/8+    | 697 383        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110   | Statoll USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoll USA Onshore Properties Inc chanded its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141  | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |  |
| 10*27086 | 5-26-11 | CC  | DONALD R NEWLAND AND SUZANNE NEWLAND PIKEWOOD ENERGY CORPORATION AN OHIO CORPORATION | GASTAR EXPLORATION USA INC | 1/8+    | 698 639        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Chesapeake Appalachia LLC and Statoll USA Onshore Properties Inc: 27/311  | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110            | Statoll USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424                      | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624               | Name Chane - Statoll USA Onshore Properties Inc chanded its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141         | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |
| 10*27714 | 5-26-11 | CC  | STONE HILL MINERALS HOLDINGS LLC   | TH EXPLORATION LLC         | 1/8+    | 1060 572       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A  |  |
| 10*27959 | 5-26-11 | CC  | STONE HILL MINERALS HOLDINGS LLC   | TH EXPLORATION LLC         | 1/8+    | 1063 594       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A   | N/A   | N/A  |  |
| 10*14786 | 5-25-18 | DD  | TWILA O WHIKEY   | GASTAR EXPLORATION USA INC | 1/8+    | 799 61         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | Gastar Exploration USA Inc and Atinum Marcellus I LLC: 806/1  | Merger - 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: 43/563          |
| 10*14797 | 5-25-18 | DD  | ORVILLE YOUNG  | GASTAR EXPLORATION USA INC | 1/8+    | 800 598        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1   | Merger - 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: 43/563          |
| 10*14822 | 5-25-18 | DD  | ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE                                      | GASTAR EXPLORATION USA INC | 1/8+    | 876 463        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144  | Merger - 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: 43/563          |
| 10*14823 | 5-25-18 | DD  | SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE                                       | GASTAR EXPLORATION USA INC | 1/8+    | 876 459        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144  | Merger - 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: 43/563          |
| 10*17195 | 5-25-18 | DD  | PATRICIA HARTMAN   | GASTAR EXPLORATION USA INC | 1/8+    | 695 317        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoll USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110            | Statoll USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424                      | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624               | Statoll USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256         |  |
| 10*17196 | 5-25-18 | DD  | DELBERT R. MONTGOMERY  | GASTAR EXPLORATION USA INC | 1/8+    | 695 311        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353  | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoll USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110            | Statoll USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424                      | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624               | Statoll USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256         |  |

| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.                           | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment  | Assignment  | Assignment  | Assignment   |   |  |  |
|----------|---------|-----|---|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|---|---|---|--|---|--|--|
| 10*17197 | 5-25-18 | DD  | GLORIA J. SIMMONS HAROLD SIMMONS                | GASTAR EXPLORATION USA INC | 1/8+    | 695 313        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17199 | 5-25-18 | DD  | PAMELA L DRAZIC AND JEFFREY DRAZIC              | GASTAR EXPLORATION USA INC | 1/8+    | 695 315        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17200 | 5-25-18 | DD  | STEPHANIE L BATES                               | GASTAR EXPLORATION USA INC | 1/8+    | 697 156        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17201 | 5-25-18 | DD  | DENISE A GALE                                   | GASTAR EXPLORATION USA INC | 1/8+    | 697 395        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17202 | 5-25-18 | DD  | JANE GALE                                       | GASTAR EXPLORATION USA INC | 1/8+    | 697 385        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17203 | 5-25-18 | DD  | BARRY RAY MOORE                                 | GASTAR EXPLORATION USA INC | 1/8+    | 697 387        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17204 | 5-25-18 | DD  | CLARENCE RICHARD ZESIGER & MARY ZESIGER         | GASTAR EXPLORATION USA INC | 1/8+    | 697 391        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17206 | 5-25-18 | DD  | M VIRGINIA & EDWARD C MARSH                     | GASTAR EXPLORATION USA INC | 1/8+    | 697 399        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17207 | 5-25-18 | DD  | DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR. | GASTAR EXPLORATION USA INC | 1/8+    | 697 389        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |

| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment   | Assignment  | Assignment  | Assignment   | Assignment   |   |  |  |
|----------|---------|-----|--|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|--|---|---|--|--|---|--|--|
| 10*17210 | 5-25-18 | DD  | MARILYN NOEL   | GASTAR EXPLORATION USA INC | 1/8+    | 697 393        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17211 | 5-25-18 | DD  | GARY WAYNE ZESIGER & VITORINA ZESIGER  | GASTAR EXPLORATION USA INC | 1/8+    | 697 397        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17212 | 5-25-18 | DD  | DARRELL NEWLAND LYDIA NEWLAND  | GASTAR EXPLORATION USA INC | 1/8+    | 697 158        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17213 | 5-25-18 | DD  | CAROL DEEN GARDNER   | GASTAR EXPLORATION USA INC | 1/8+    | 697 154        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*18275 | 5-25-18 | DD  | BETTY JEAN NEELY   | TH EXPLORATION LLC         | 1/8+    | 929 60         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*18366 | 5-25-18 | DD  | MICHAEL WILSON AIF   | TH EXPLORATION LLC         | 1/8+    | 931 311        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*18369 | 5-25-18 | DD  | CRAIG ALAN YOHO AND DONNA M YOHO   | TH EXPLORATION LLC         | 1/8+    | 931 303        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*18370 | 5-25-18 | DD  | SAMUEL D YOHO  | TH EXPLORATION LLC         | 1/8+    | 931 300        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*18379 | 5-25-18 | DD  | DAVID N DEVICK TRUSTEE OF THE TONI JO MASON LIVING TRUST                             | TH EXPLORATION LLC         | 1/8+    | 932 439        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*19540 | 5-25-18 | DD  | ERICA M MASON  | TH EXPLORATION LLC         | 1/8+    | 942 53         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*19652 | 5-25-18 | DD  | JACK R HAMMERS   | TH EXPLORATION LLC         | 1/8+    | 944 108        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*19903 | 5-25-18 | DD  | PAUL F HAMMERS   | TH EXPLORATION LLC         | 1/8+    | 948 236        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*22008 | 5-25-18 | DD  | COLIN R YOHO AND NORMA L YOHO  | TH EXPLORATION LLC         | 1/8+    | 953 304        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*22025 | 5-25-18 | DD  | MARK EUGENE YOHO & MARY YOHO   | TH EXPLORATION LLC         | 1/8+    | 960 544        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*22129 | 5-25-18 | DD  | JANICE N HAUDENSCHILT  | TH EXPLORATION LLC         | 1/8+    | 961 459        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*22441 | 5-25-18 | DD  | APRIL ROSE POSTLETHWAIT  | TH EXPLORATION LLC         | 1/8+    | 963 646        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*22510 | 5-25-18 | DD  | DONNA V YOHO   | TH EXPLORATION LLC         | 1/8+    | 964 432        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*23372 | 5-25-18 | DD  | DEWEY A MILICIA  | TH EXPLORATION LLC         | 1/8+    | 1008 320       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*23373 | 5-25-18 | DD  | DANA MILICIA HUMPHREYS   | TH EXPLORATION LLC         | 1/8+    | 988 429        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*23446 | 5-25-18 | DD  | NICOLETTA MILICIA BLOODWORTH   | TH EXPLORATION LLC         | 1/8+    | 1008 316       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*25627 | 5-25-18 | DD  | CHESTNUT HOLDINGS INC  | TH EXPLORATION LLC         | 1/8+    | 1034 548       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |
| 10*27078 | 5-25-18 | DD  | CECILIA D NEWLAND  | GASTAR EXPLORATION USA INC | 1/8+    | 697 381        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoil USA Onshore Properties Inc chanded its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141 | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |
| 10*27085 | 5-25-18 | DD  | DAPHNE HUFFMAN AND CHARLES HUFFMAN   | GASTAR EXPLORATION USA INC | 1/8+    | 697 383        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoil USA Onshore Properties Inc chanded its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141 | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |
| 10*27086 | 5-25-18 | DD  | DONALD R NEWLAND AND SUZANNE NEWLAND PIKEWOOD ENERGY CORPORATION AN OHIO CORPORATION | GASTAR EXPLORATION USA INC | 1/8+    | 698 639        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoil USA Onshore Properties Inc chanded its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141 | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |
| 10*27714 | 5-25-18 | DD  |  | TH EXPLORATION LLC         | 1/8+    | 1060 572       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A   | N/A  | N/A  |

| Lease ID | TMP      | Tag | Grantor, Lessor, Etc.             | Grantee, Lessee, Etc.      | Royalty | Dead Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment  | Assignment  | Assignment   | Assignment  |  |  |
|----------|----------|-----|-----------------------------------|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|---|---|--|---|--|--|
| 10*17189 | 5-23-9.1 | HH  | ROBERT J HENRY                    | CHESAPEAKE APPALACHIA LLC  | 1/8+    | 716 197        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 29/325 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC with and into SWN Production Company LLC: CB 13/296 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*14969 | 5-23-12  | II  | REBECCA S WORD                    | GASTAR EXPLORATION USA INC | 1/8+    | 872 219        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/119               | Name Change - Gastar Exploration USA Inc to Statoil USA Onshore Properties Inc: 21/41     | Gastar Exploration USA Inc to TH Exploration II LLC: 36/9        | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563  |
| 10*14970 | 5-23-12  | II  | GRACE EXLINE                      | GASTAR EXPLORATION USA INC | 1/8+    | 872 623        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/119               | Name Change - Gastar Exploration USA Inc to Statoil USA Onshore Properties Inc: 21/41     | Gastar Exploration USA Inc to TH Exploration II LLC: 36/9        | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563  |
| 10*18541 | 5-23-12  | II  | PATRICK P MCHENRY                 | TH EXPLORATION LLC         | 1/8+    | 933 649        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*18818 | 5-23-12  | II  | LUCILLE R MCHENRY                 | TH EXPLORATION LLC         | 1/8+    | 937 624        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*19732 | 5-23-12  | II  | CARL M MCHENRY AND PAMELA MCHENRY | TH EXPLORATION LLC         | 1/8+    | 944 469        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*19996 | 5-23-12  | II  | CHARLES D WOOD                    | TH EXPLORATION LLC         | 1/8+    | 947 589        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*21073 | 5-23-12  | II  | ARDITH R ROSE AND TOMMY E ROSE    | TH EXPLORATION LLC         | 1/8+    | 951 608        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*21074 | 5-23-12  | II  | MALCOLM E WOOD AND JOAN J WOOD    | TH EXPLORATION LLC         | 1/8+    | 951 610        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*21174 | 5-23-12  | II  | SHAWN M WOOD                      | TH EXPLORATION LLC         | 1/8+    | 952 190        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*21944 | 5-23-12  | II  | JILL A BECK                       | TH EXPLORATION LLC         | 1/8+    | 960 101        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*22434 | 5-23-12  | II  | EDWIN NELSON WOOD                 | TH EXPLORATION LLC         | 1/8+    | 963 637        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*22585 | 5-23-12  | II  | CYNTHIA L CHICK                   | TH EXPLORATION LLC         | 1/8+    | 966 102        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*24281 | 5-23-12  | II  | MARY MARTHA BELLE DOYLE           | TH EXPLORATION LLC         | 1/8+    | 1024 285       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*25065 | 5-23-12  | II  | COLBY G WOOD                      | TH EXPLORATION LLC         | 1/8+    | 1027 103       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*25065 | 5-23-12  | II  | RODGER A HENDERSON JR             | TH EXPLORATION LLC         | 1/8+    | 1027 97        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*27959 | 5-23-12  | II  | STONE HILL MINERALS HOLDINGS LLC  | TH EXPLORATION LLC         | 1/8+    | 1063 594       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A   | N/A   | N/A  | N/A   | N/A  | N/A  |
| 10*17189 | 5-23-9.2 | KK  | ROBERT J HENRY                    | CHESAPEAKE APPALACHIA LLC  | 1/8+    | 716 197        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 29/325 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC with and into SWN Production Company LLC: CB 13/296 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |

MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES

STATE OF WEST VIRGINIA         §  
  §  
COUNTY OF WETZEL            §

This **MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES** (hereinafter, the "Memorandum") has been executed by and between **PERKINS OIL & GAS, INC.**, a West Virginia corporation, whose address is 2966 Northwest Turnpike, Pennsboro, West Virginia 26415 (hereinafter the "Assignor"), and **TH EXPLORATION, LLC**, a Texas limited liability company (hereinafter the "Assignee") whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107. Assignor and Assignee are sometimes referred to herein, collectively, as the "Parties" and, individually, as a "Party." This Memorandum is being executed for the purpose of providing notice to third parties of the execution of a certain Partial Assignment of Oil and Gas Leases (hereinafter, the "Assignment"), by and between the Parties.

**WHEREAS**, Assignor is the current owner and lessee of certain oil and gas leases located in Wetzel County, West Virginia, covering specific parcels and being more particularly described on **Exhibit "A"** attached hereto and made a part hereof (collectively, the "Oil and Gas Leases").

In the Assignment dated effective as of the 15<sup>th</sup> day of October, 2020 (hereinafter, the "Effective Date") and this Memorandum, Assignor does hereby **GRANT, BARGAIN, SELL, CONVEY, TRANSFER and ASSIGN** unto Assignee, all right, title and interest in and to the Oil and Gas Leases **INSOFAR AND ONLY INSOFAR** as each lease and parcel covers those formations lying between two hundred (200) feet above and two hundred (200) feet below the formations commonly known to as the Utica/Point Pleasant Shale formations, or the stratigraphic equivalent thereof (such depths and formations being referred to as the "Assigned Formations"). The Assigned Formations are included with and part of the Assigned Rights as defined in the Assignment.

**EXCLUDING THEREFROM AND EXCEPTING AND RESERVING UNTO THE ASSIGNOR, ITS SUCCESSORS AND ASSIGNS, THE OVERRIDING ROYALTY INTEREST**, as defined in the Assignment.

The Assignment contains various other terms, provisions and conditions, all of which are incorporated herein by reference, and made a part hereof in all respects as though the same were fully set forth herein. To the extent that there are any inconsistencies between this Memorandum and the Assignment, the terms and provisions of the Assignment shall prevail.

Assignor does hereby bind itself and its successors and assigns to warrant and forever defend all and singular title to the Assigned Formations unto Assignee and Assignee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by through, or under Assignor, but not otherwise.

This Memorandum is made expressly subject to the terms and conditions of the Purchase and Sale Agreement dated June, 24, 2020, by and between the Parties, all of which are fully incorporated herein by reference (the "Purchase Agreement").

This Memorandum may be executed in multiple counterparts, each of which shall be deemed an original instrument, but all such counterparts together shall constitute but one agreement.

*[TWO SIGNATURE PAGES TO FOLLOW]*

DPS LAND SERVICES-AMANDA  
6000 TOWAN CENTER BLVD  
STE 145  
CANNONBURG PA 15317-5841

10/21/2022

**MEMORANDUM OF CORRECTIVE PARTIAL ASSIGNMENT OF OIL AND GAS  
LEASES**

STATE OF WEST VIRGINIA  
COUNTY OF WETZEL

THIS MEMORANDUM OF CORRECTIVE PARTIAL ASSIGNMENT OF OIL AND GAS LEASES (hereinafter, the "Memorandum") is dated the 5<sup>th</sup> day of November, 2021, but effective for all purposes as of the 15<sup>th</sup> day of October, 2020 (the "Effective Date"), is made by and between PERKINS OIL & GAS, INC., a West Virginia corporation, whose address is 2966 Northwest Turnpike, Pennsboro, West Virginia 26415 (hereinafter the "Assignor"), and THE EXPLORATION, L.L.C., a Texas limited liability company (hereinafter the "Assignee") whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107. Assignor and Assignee are sometimes referred to herein, collectively, as the "Parties" and, individually, as a "Party." This Memorandum is being executed for the purpose of providing notice to third parties of the execution of a certain Corrective Partial Assignment of Oil and Gas Leases (hereinafter, the "Corrective Assignment"), by and between the Parties.

**WHEREAS**, Assignor and Assignee desire to correct and replace that certain Partial Assignment of Oil and Gas Leases dated October 15, 2020, a memorandum of which is recorded in the Clerk's Office of Wetzell County, West Virginia, in Lease Book 251A, Page 463, as to those certain oil and gas leases located in Wetzell County, West Virginia, covering specific parcels and being more particularly described on Exhibit "A" attached hereto and made a part hereof (collectively, the "Oil and Gas Leases").

In the Corrective Assignment and this Memorandum dated effective as of the Effective Date, Assignor does hereby GRANT, BARGAIN, SELL, CONVEY, TRANSFER and ASSIGN unto Assignee, all right, title and interest in and to the Oil and Gas Leases INSOFAR AND ONLY INSOFAR as each lease and parcel covers those formations lying between two hundred (200) feet above and two hundred (200) feet below the formations commonly known to as the Utica/Point Pleasant Shale formations, or the stratigraphic equivalent thereof (such depths and formations being referred to as the "Assigned Formations"). The Assigned Formations are included with and part of the Assigned Rights as defined in the Corrective Assignment.

**EXCLUDING THEREFROM AND EXCEPTING AND RESERVING UNTO THE ASSIGNOR, ITS SUCCESSORS AND ASSIGNS, THE OVERRIDING ROYALTY INTEREST**, as defined in the Corrective Assignment.

The Corrective Assignment contains various other terms, provisions and conditions, all of which are incorporated herein by reference, and made a part hereof in all respects as though the same were fully set forth herein. To the extent that there are any inconsistencies between this Memorandum and the Corrective Assignment, the terms and provisions of the Corrective Assignment shall prevail.

Assignor does hereby bind itself and its successors and assigns to warrant and forever defend all and singular title to the Assigned Formations unto Assignee and Assignee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by through, or under Assignor, but not otherwise.

This Memorandum is made expressly subject to the terms and conditions of the Purchase and Sale Agreement dated June, 24, 2020, by and between the Parties, all of which are fully incorporated herein by reference (the "Purchase Agreement").

This Memorandum may be executed in multiple counterparts, each of which shall be deemed an original instrument, but all such counterparts together shall constitute but one agreement.

DPS LAND SERVICES-AMANDA  
6000 TOWN CENTER BLVD  
STE 145  
CANONSBURG PA 15317-5841

**ASSIGNMENT OF OIL AND GAS LEASES**

This ASSIGNMENT OF OIL AND GAS LEASES (hereinafter, "**Assignment**"), made the 7th day of October, 2021 (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 May 26, 2021 (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 Wetzel County, West Virginia ("**Leases**") **TO THE EXTENT AND ONLY TO THE EXTENT** of the Utica/Point Pleasant Formation (as defined below) (the Leases limited to the Utica/Point Pleasant Formation are the "**Leasehold Rights**");
- (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 Leasehold Rights, 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; and
- (c) to the extent the formations shallower than the Utica/Point Pleasant Formation are owned or controlled by Assignor, the non-exclusive right to penetrate and drill through, but not stimulate, perforate or produce, the formations shallower than the Utica/Point Pleasant Formation in order to drill and produce from the Utica/Point Pleasant Formation.

**TO HAVE AND TO HOLD** the Assigned Rights unto Assignee, its respective successors and assigns, subject to the terms of this Assignment.

"**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 depths and formations for each Lease described on **Exhibit A** other than the Utica/Point Pleasant Formation ("**Retained Formations**"), (iii) all rights relating to, or necessary in connection with, the ownership, exploration, drilling, development, or operation of the Retained Wells and Retained Formations, 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,

MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES

STATE OF WEST VIRGINIA       §  
  §  
COUNTY OF MARSHALL       §

This **MEMORANDUM OF PARTIAL ASSIGNMENT OF OIL AND GAS LEASES** (hereinafter, the "Memorandum") has been executed by and between **PERKINS OIL & GAS, INC.**, a West Virginia corporation, whose address is 2966 Northwest Turnpike, Pennsboro, West Virginia 26415 (hereinafter the "Assignor"), and **TH EXPLORATION, LLC**, a Texas limited liability company (hereinafter the "Assignee") whose address is 1320 South University Drive, Suite 500, Fort Worth, Texas 76107. Assignor and Assignee are sometimes referred to herein, collectively, as the "Parties" and, individually, as a "Party." This Memorandum is being executed for the purpose of providing notice to third parties of the execution of a certain Partial Assignment of Oil and Gas Leases (hereinafter, the "Assignment"), by and between the Parties.

**WHEREAS**, Assignor is the current owner and lessee of certain oil and gas leases located in Wetzel County, West Virginia, covering specific parcels and being more particularly described on **Exhibit "A"** attached hereto and made a part hereof (collectively, the "Oil and Gas Leases").

In the Assignment dated effective as of the 15<sup>th</sup> day of October, 2020 (hereinafter, the "Effective Date") and this Memorandum, Assignor does hereby **GRANT, BARGAIN, SELL, CONVEY, TRANSFER and ASSIGN** unto Assignee, all right, title and interest in and to the Oil and Gas Leases **INSOFAR AND ONLY INSOFAR** as each lease and parcel covers those formations lying between two hundred (200) feet above and two hundred (200) feet below the formations commonly known to as the Utica/Point Pleasant Shale formations, or the stratigraphic equivalent thereof (such depths and formations being referred to as the "Assigned Formations"). The Assigned Formations are included with and part of the Assigned Rights as defined in the Assignment.

**EXCLUDING THEREFROM AND EXCEPTING AND RESERVING UNTO THE ASSIGNOR, ITS SUCCESSORS AND ASSIGNS, THE OVERRIDING ROYALTY INTEREST**, as defined in the Assignment.

The Assignment contains various other terms, provisions and conditions, all of which are incorporated herein by reference, and made a part hereof in all respects as though the same were fully set forth herein. To the extent that there are any inconsistencies between this Memorandum and the Assignment, the terms and provisions of the Assignment shall prevail.

Assignor does hereby bind itself and its successors and assigns to warrant and forever defend all and singular title to the Assigned Formations unto Assignee and Assignee's successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by through, or under Assignor, but not otherwise.

This Memorandum is made expressly subject to the terms and conditions of the Purchase and Sale Agreement dated June, 24, 2020, by and between the Parties, all of which are fully incorporated herein by reference (the "Purchase Agreement").

This Memorandum may be executed in multiple counterparts, each of which shall be deemed an original instrument, but all such counterparts together shall constitute but one agreement.

*[TWO SIGNATURE PAGES TO FOLLOW]*



STATE OF WEST VIRGINIA                   §  
  §  
COUNTIES OF MARSHALL AND WETZEL   §

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 30<sup>th</sup> day of April, 2019 (the "Effective Date"), by and between Atinum Marcellus I, LLC (hereinafter "Assignor") and TH Exploration II, LLC, (hereinafter "Assignee") and, together with Assignor, the "Parties"). Capitalized terms used but not defined herein shall have the meanings commonly given to such terms in the industry.

WITNESSETH:

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to one hundred feet (100 ft.) above the formation commonly referred to as the Marcellus Shale formation down to one hundred feet (100 ft.) below the same, in those certain Oil and Gas Leases, or the portions of those certain Oil and Gas Leases, situated in Marshall and Wetzel Counties, West Virginia, as described in Exhibit "A-1" and limited and described in Exhibit "A-2", attached hereto and made a part hereof. It being the Parties intention to assign all of Assignor's interest in each unit as described in Exhibit "A-1", including any changes, revisions, or amendments to the same, now or at any time in the future. (hereinafter the "Leases"); and

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

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

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title, and interest in and to one hundred feet (100 ft.) above the formation commonly referred to as the Marcellus Shale formation down to one hundred feet (100 ft.) below the same, in the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon. It being the Parties intention to assign all of Assignor's interest in each unit as described in Exhibit "A-1", including any changes, revisions, or amendments to the same, now or at any time in the future.

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

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than permits or easements, rights of way, surface leases and other rights with respect to surface operations that do not materially interfere with, impair or prohibit the operation of the affected Leases, hereinafter "Permitted Encumbrances") its interest in the Leases since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the

## ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "*Assignment*") is from SWN PRODUCTION COMPANY, LLC, a Texas limited liability company ("*Assignor*"), to TH Exploration, LLC, a Texas limited liability company ("*Assignee*"), and is executed on December 18, 2017 (the "*Effective Date*"). Assignor and Assignee may be referred to herein collectively as the "*Parties*," or individually as a "*Party*." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated August 24, 2017 (the "*Acreage Trade Agreement*").

### ARTICLE 1 ASSIGNMENT OF ASSETS

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

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

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

### ARTICLE 2 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

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

**Section 2.2 Disclaimers of Warranties and Representations.**

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION VI OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR

## ASSIGNMENT AND CONVEYANCE

This Assignment and Conveyance (this "*Assignment*") is from EQUINOR USA ONSHORE PROPERTIES, INC., a Delaware corporation ("*Assignor*"), to TH Exploration, LLC, a Texas limited liability company ("*Assignee*"), and is executed on June 18, 2019 (the "*Effective Date*"). Assignor and Assignee may be referred to herein collectively as the "*Parties*," or individually as a "*Party*." Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated December 1, 2018 (the "*Acreage Trade Agreement*").

### ARTICLE 1 ASSIGNMENT OF ASSETS

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

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

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

### ARTICLE 2 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS

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

**Section 2.2** Disclaimers of Warranties and Representations.

(a) EXCEPT AS EXPRESSLY REPRESENTED OTHERWISE IN SECTION VI OF THE ACREAGE TRADE AGREEMENT OR THIS ASSIGNMENT, ASSIGNOR MAKES NO, AND HEREBY EXPRESSLY DISCLAIMS, ANY REPRESENTATION OR WARRANTY, EXPRESS, IMPLIED OR STATUTORY, INCLUDING AS TO (I) TITLE TO THE LEASEHOLD RIGHTS, (II) THE CONTENTS, CHARACTER OR NATURE OF ANY DESCRIPTIVE MEMORANDUM, OR ANY REPORT OF ANY OF ITS PETROLEUM ENGINEERING CONSULTANTS, OR ANY GEOLOGICAL OR SEISMIC DATA OR INTERPRETATION, RELATING TO THE LEASEHOLD RIGHTS, (III) THE QUANTITY, QUALITY OR RECOVERABILITY OF PETROLEUM SUBSTANCES IN OR FROM THE LEASEHOLD RIGHTS, (IV) THE EXISTENCE OF ANY PROSPECT, OR ANY RECOMPLETION, INFILL OR STEP-OUT DRILLING OPPORTUNITIES, (V) ANY ESTIMATES OF THE VALUE OF THE LEASEHOLD RIGHTS, (VI) THE PRODUCTION OF PETROLEUM SUBSTANCES FROM THE LEASEHOLD RIGHTS, OR ANY PRODUCTION OR DECLINE RATES, (VII) THE MAINTENANCE, REPAIR, CONDITION, QUALITY, SUITABILITY, DESIGN OR MARKETABILITY OF THE LEASEHOLD RIGHTS, (VIII) INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT, AND (IX) ANY OTHER MATERIALS OR INFORMATION THAT MAY HAVE BEEN MADE AVAILABLE OR COMMUNICATED TO ASSIGNEE OR ITS AFFILIATES, OR ITS OR THEIR RESPECTIVE

## MEMORANDUM OF SURFACE USE AGREEMENT

This Memorandum of Surface Use Agreement ("Memorandum") made this 25 day of May 2021 by and between Charles Lee & Betty Jean Huggins, husband and wife, whose address is 5352 Palmer Ridge Road, Proctor, WV 26055, (hereinafter collectively called "Surface Owner"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address of 1320 S. University Drive, Suite 500, Fort Worth, TX 76107, (hereinafter called "Company").

### WITNESSETH

For and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, Surface Owner did make and execute in favor of Company a Surface Use Agreement (the "Agreement") dated May 25, 2021 and made effective May 25, 2021 which provides for a five (5) year term ("Agreement Term") covering Surface Owner's interest in the following described lands (the "Lands"):

The Lands are located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including lands identified as: 12-8-16, and described for the purposes of this Memorandum as containing 39.19 acres, and Lands located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including all contiguous or appurtenant lands owned by Surface Owner, as described in that certain deed dated July 1, 1987 and recorded in the office of the County Clerk of the aforesaid County in Deed Book, 322-120.

The Company desires to use the portion of Land labeled as "Limit of Disturbance - Pad" and "Limit of Disturbance - Access Road" on the attached Exhibit A for the construction and installation of access roads, drilling pads, tanks, fences, pits and any other facilities or equipment necessary or convenient for the drilling, completion, production, operation, and maintenance of the Company's operations on or off the Land as well as to lay, maintain, excavate, construct, survey, re-construct, operate, tie into, inspect, enlarge, repair, replace, alter, clear trees and other obstructions, and remove, one or more above and/or below ground pipelines, whether permanent or temporary, with fittings and appliances, for the transportation of potable and non-potable fresh water, produced water, completion backflow water, oil, gas and other liquid or gaseous products/substances to and from wells drilled, or to be drilled, on or off the Lands and the Surface Owner is agreeable to the same on the terms and conditions set out in the Agreement.

The Agreement also grants unto Company, Surface Owner's consent to and an easement for the drilling, production, and operation of shallow and deep horizontal or vertical oil and gas wells at any legal location(s) upon the surface of the Lands pursuant to W. Va. Code §§ 22-6A and 22C-9-7(b)(4) and applicable regulations.

The Agreement, with all of its terms, covenants and other provisions, is referred to and incorporated into this Memorandum for all purposes. This Memorandum is placed of record for the purpose of giving notice of the Agreement. Nothing contained in this Memorandum will alter or amend any of the terms and provisions of the Agreement. In the event of any conflict between this Memorandum and the Agreement, the terms and conditions of the Agreement shall control.

IN WITNESS WHEREOF this Memorandum of Surface Use Agreement is executed as of the date first above written.

Surface Owner:

Charles Lee Huggins  
Charles Lee Huggins

Betty Jean Huggins  
Betty Jean Huggins

Company: TH EXPLORATION, LLC

By:

Benjamin J. Irwin  
Name: Benjamin J. Irwin  
Title: Attorney-in-Fact

REC'D CIVIC  
APR 28 2022

APR 28 2022

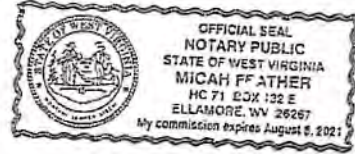
ACKNOWLEDGEMENT

STATE OF WEST VIRGINIA )  
 ) SS:  
COUNTY OF WETZEL )

On this the 25 day of May, 2021, before me, a notary public, the undersigned authority, personally appeared Charles Lee Huggins, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he/she executed the same for the purposes therein contained.  
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires August 8, 2021 Signature: [Signature]  
Notary Public

Name/Notary Public (print): Micah Feather



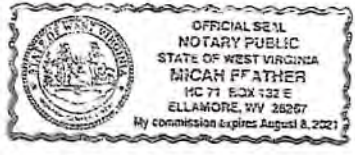
ACKNOWLEDGEMENT

STATE OF WEST VIRGINIA )  
 ) SS:  
COUNTY OF WETZEL )

On this the 25 day of May, 2021, before me, a notary public, the undersigned authority, personally appeared Betty Jean Huggins, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument, and acknowledged that he/she executed the same for the purposes therein contained.  
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires August 8, 2021 Signature: [Signature]  
Notary Public

Name/Notary Public (print): Micah Feather



ACKNOWLEDGEMENT

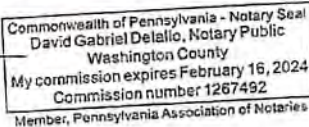
COMMONWEALTH OF PENNSYLVANIA )  
 ) SS:  
COUNTY OF WASHINGTON )

On this, the 25 day of May, 2021, before me a notary public, the undersigned authority, personally appeared Benjamin J. Irwin, who acknowledged himself to be the Attorney-In-Fact of TH EXPLORATION, LLC, a Texas limited liability company, and that he as such Attorney-In-Fact being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the limited liability company by himself as Attorney-In-Fact.

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

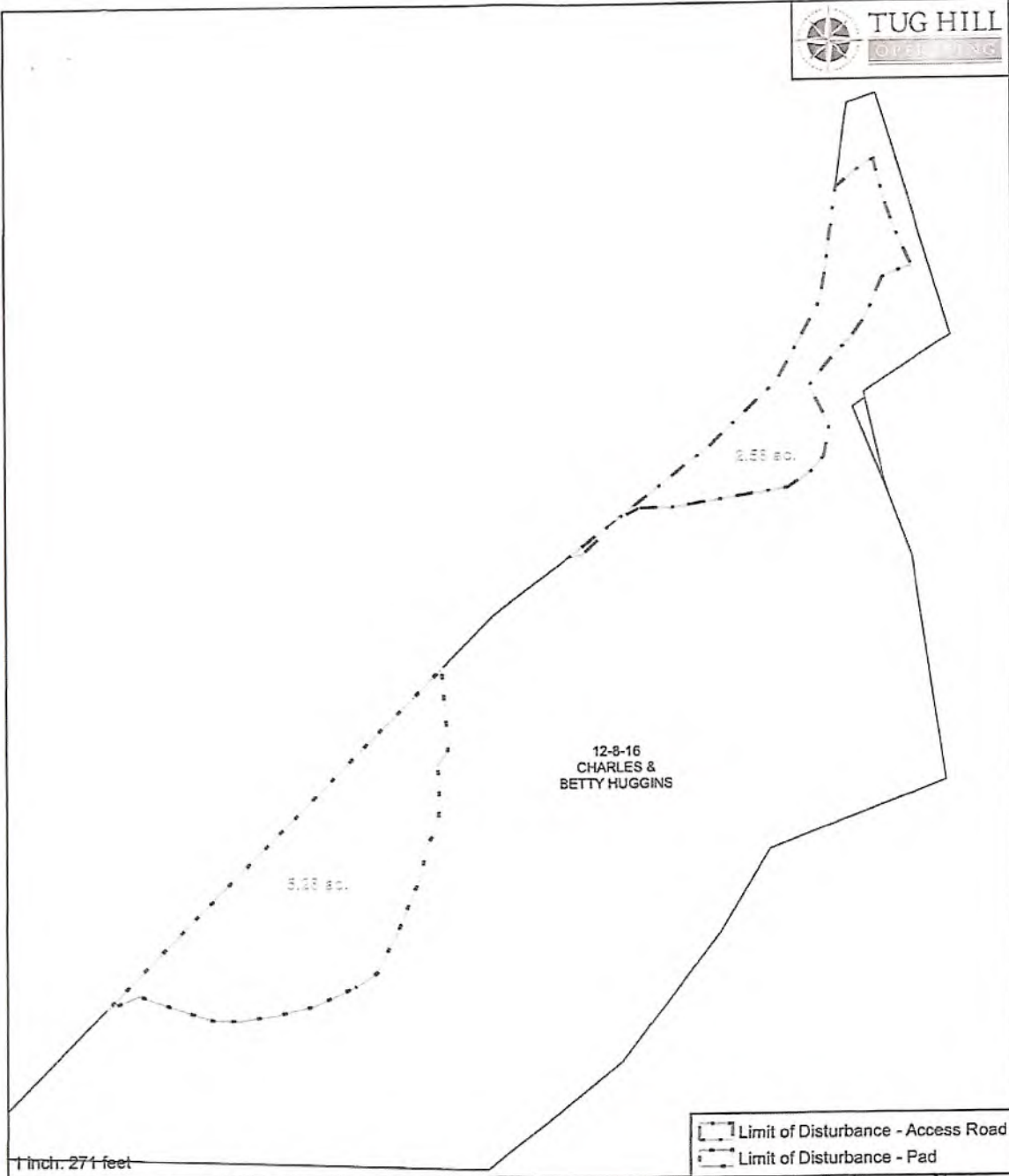
My Commission Expires: 2/16/24 Signature: [Signature]  
Notary Public

Name/Notary Public (print): David G. Delallo



Prepared by and please return to:  
TH Exploration, LLC  
1320 S. University Drive, Suite 500  
Fort Worth, TX 76107

APR 28 2022  
Department of Environmental Protection



1 inch = 271 feet

0 80 160 320  
Feet

N

NOTE: THE INFORMATION CONTAINED HEREIN IS FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE AN OFFER OF ANY FINANCIAL PRODUCT OR SERVICE. THE INFORMATION IS NOT INTENDED TO BE USED AS A BASIS FOR ANY INVESTMENT DECISION. THE INFORMATION IS NOT INTENDED TO BE USED AS A BASIS FOR ANY INVESTMENT DECISION. THE INFORMATION IS NOT INTENDED TO BE USED AS A BASIS FOR ANY INVESTMENT DECISION.

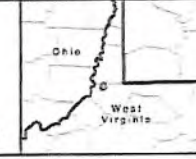
**Exhibit "A"**

CHARLES & BETTY HUGGINS  
Wetzel County, WV

Date: 5-25-21

Name: C L H

Name: Betty Spivey Huggins



Date: 4/14/2021  
PCS: NAD 1983 UTM Zone 17N Feet US

RECEIVED  
Office of Oil and Gas  
APR 28 2022  
WV Department of  
Environmental Protection

Wetzel County  
Carol S. Hovant, Clerk  
Instrument 308767  
06/11/2021 @ 03:59:54 PM  
ASSESSMENT  
Book 139 @ Page 714  
Pages Recorded 3  
Recording Cost \$  
11.00

10/21/2022

TRAVIVA WOSKO  
OFS LAND SERVICES  
4000 TOWN CENTER BLVD  
STE 245  
DARIENBURG WV 25817-0841

## MEMORANDUM OF SURFACE USE AGREEMENT

This Memorandum of Surface Use Agreement ("Memorandum") made this 14 day of MAY 2021 by and between Elnora Tuttle, by her Power-of-Attorney whose address is 6768 Proctor Creek Road, Proctor, WV 26055, (hereinafter collectively called "Surface Owner"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address of 1320 S. University Drive, Suite 500, Fort Worth, TX 76107, (hereinafter called "Company").

### WITNESSETH

For and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and intending to be legally bound, Surface Owner did make and execute in favor of Company a Surface Use Agreement (the "Agreement") dated MAY 14, 2021 and made effective MAY 14, 2021 which provides for a ten (10) year term ("Agreement Term") covering Surface Owner's interest in the following described lands (the "Lands"):

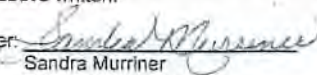
The Lands are located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including lands identified as: 12-8-15, and described for the purposes of this Memorandum as containing 39.2 acres, and Lands located, all or part, in Proctor District, Wetzel County, State of West Virginia, and including all contiguous or appurtenant lands owned by Surface Owner, as described in that certain deed dated July 25, 1985 and recorded in the office of the County Clerk of the aforesaid County in Deed Book, 315-62.

The Company desires to use the portion of Land labeled as "Limit of Disturbance - Pad" and "Limit of Disturbance - Access Road" on the attached Exhibit A for the construction and installation of access roads, drilling pads, tanks, fences, pits and any other facilities or equipment necessary or convenient for the drilling, completion, production, operation, and maintenance of the Company's operations on or off the Land as well as to lay, maintain, excavate, construct, survey, re-construct, operate, tie into, inspect, enlarge, repair, replace, alter, clear trees and other obstructions, and remove, one or more above and/or below ground pipelines, whether permanent or temporary, with fittings and appliances, for the transportation of potable and non-potable fresh water, produced water, completion backflow water, oil, gas and other liquid or gaseous products/substances to and from wells drilled, or to be drilled, on or off the Lands and the Surface Owner is agreeable to the same on the terms and conditions set out in the Agreement.


The Agreement also grants unto Company, Surface Owner's consent to and an easement for the drilling, production, and operation of shallow and deep horizontal or vertical oil and gas wells at any legal location(s) upon the surface of the Lands pursuant to W. Va. Code §§ 22-6A and 22C-9-7(b)(4) and applicable regulations.

The Agreement, with all of its terms, covenants and other provisions, is referred to and incorporated into this Memorandum for all purposes. This Memorandum is placed of record for the purpose of giving notice of the Agreement. Nothing contained in this Memorandum will alter or amend any of the terms and provisions of the Agreement. In the event of any conflict between this Memorandum and the Agreement, the terms and conditions of the Agreement shall control.

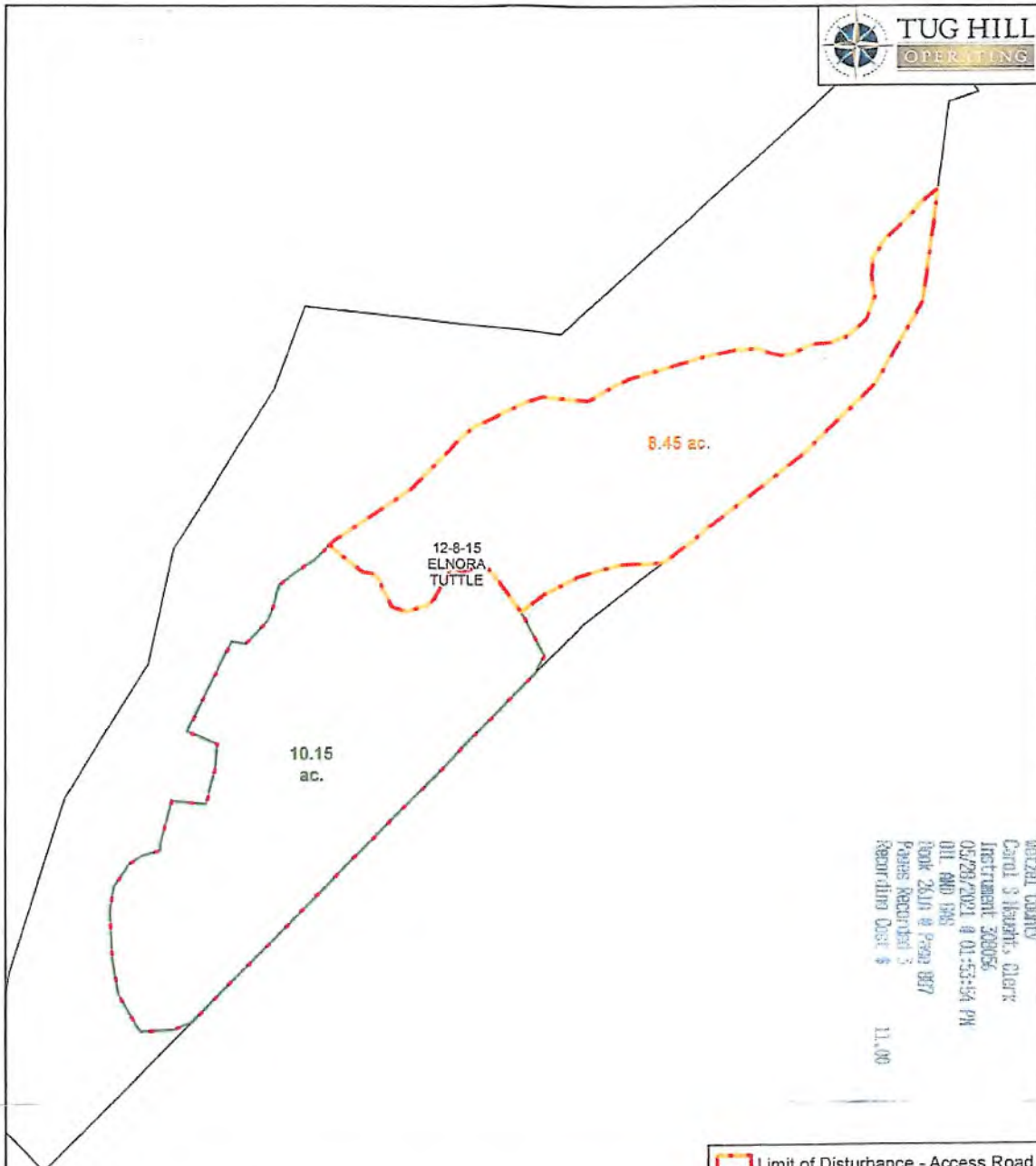
IN WITNESS WHEREOF this Memorandum of Surface Use Agreement is executed as of the date first above written.

Surface Owner:   
Sandra Murriner  
Power-of-Attorney

Company: TH EXPLORATION, LLC

By:   
Name: Benjamin J. Irwin  
Title: Attorney-in-Fact

RECEIVED  
APR 28 2022



Wetzel County  
Carol S. Roberts, Clerk  
Instrument 202056  
05/29/2021 @ 01:55:54 PM  
Oil AND GAS  
Book 2619 # Page 097  
Pages Recorded 3  
Recording Date 4/11/2021

1 inch = 273 feet

Limit of Disturbance - Access Road  
 Limit of Disturbance - Pad

0 80 160 320  
Feet

**N**

NOTE: FIELDWORK SET LOCATION FOR THE SURFACE AND UNDERGROUND RIGHTS OF WAY AND THE LOCATION OF THE PROPERTY TO BE ACQUIRED. THESE RIGHTS SHALL BE ABANDONED AND REVERT TO THE STATE OF WEST VIRGINIA UPON THE EXPIRATION OF THE LEASE TERM. THE LOCATION OF THE SURFACE AND UNDERGROUND RIGHTS OF WAY SHALL BE AS SHOWN AND DESCRIBED IN THE RECORDS FILED IN THE COUNTY RECORDS AND THE SURFACE SET LOCATION FOR THE SURFACE RIGHTS SHALL BE AS SHOWN AND DESCRIBED IN THE RECORDS FILED IN THE COUNTY RECORDS.

**Exhibit "A"**

ELNORA TUTTLE  
Wetzel County, WV

Date: \_\_\_\_\_  
Name: Sarah D. [Signature]  
Name: \_\_\_\_\_



Date: 4/14/2021  
PCS: NAD 1983 UTM Zone 17N Feet US

RECEIVED  
Office of Oil and Gas  
APR 28 2022  
WV Department of  
Environmental Protection



May 11, 2022

SENT VIA EMAIL

Oil and Gas Conservation Commission  
Attn: Ms. Susan Rose  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Re: Objection to Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU  
Tug Hill Operating, LLC – Elmer N-15HU  
Tug Hill Operating, LLC – Elmer N-16HU  
Tug Hill Operating, LLC – Elmer N-17HU

Dear Ms. Rose:

SWN Production Company, LLC (“SWN”) hereby objects to the reference applications filed on behalf of Tug Hill Operating, LLC and requests the Commission to schedule a hearing regarding the same. SWN respectfully requests a full and complete copy of the referenced application(s).

If you have any questions or concerns, please contact the undersigned at (832) 796-6162 or via email at brandi\_williams@swn.com.

Respectfully Submitted:  
**SWN Production Company, LLC**



Brandi Williams, CPL  
Staff Landman



**SWN Production Company, LLC**  
P O Box 12359  
Spring, Texas 77391-2359  
www.swn.com

July 6, 2022

SENT VIA EMAIL

Oil and Gas Conservation Commission  
Attn: Ms. Susan Rose  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Re: Objection to Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU  
Tug Hill Operating, LLC – Elmer N-15HU  
Tug Hill Operating, LLC – Elmer N-16HU  
Tug Hill Operating, LLC – Elmer N-17HU

Dear Ms. Rose:

SWN Production Company, LLC (“SWN”) hereby withdraws the May 11, 2022 objections to the above referenced applications filed on behalf of Tug Hill Operating, LLC.

If you have any questions or concerns, please contact the undersigned at (832) 796-6162 or via email at brandi\_williams@swn.com.

Respectfully Submitted:  
**SWN Production Company, LLC**

*Brandi Williams*  
Brandi Williams, CPL  
Staff Landman



| Lease ID       | TMP     | Tag | Grantor, Lessor, Etc.                    | Grantee, Lessee, Etc.    | Royalty | Deed Book/Page | Assignment  | Assignment     | Assignment | Assignment                                     | Assignment                              | Assignment   | Assignment   | Assignment  | Assignment  | Assignment   | Assignment                             | Assignment  |   |     |
|----------------|---------|-----|--|--------------------------|---------|----------------|---|----------------|------------|--|---|--|--|---|---|--|--|---|---|-----|
| 10*231485      | 12-8-1  | C   | HENRY AND NANCY GARNER                   | J A PHILLIPS             | 1/8+    | 55 394         | N/A   | N/A            | N/A        | I A Phillips to South Penn Oil Company: 56/284 | South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 64A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| **FORCE POOL** | 12-7-22 | E   | THOMAS E GARNER AND BILLIE J GARNER      | STONE ENERGY CORPORATION | 1/8+    | 139A 800       | Stone Energy Corp to EDT Production Company: 183A/305 | **FORCE POOL** |            |  |   |  |  |   |   |  |  |   |   |     |
| **FORCE POOL** | 12-7-22 | E   | LARRY D GARNER                           | STONE ENERGY CORPORATION | 1/8+    | 139A 768       | Stone Energy Corp to EDT Production Company: 183A/305 | **FORCE POOL** |            |  |   |  |  |   |   |  |  |   |   |     |
| 10*25015       | 12-7-22 | E   | PAUL J SHANNON AND BONNIE S SHANNON      | TH EXPLORATION LLC       | 1/8+    | 221A 305       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*25016       | 12-7-22 | E   | JAMES B ISAACS AND IRIS BLAND ISAACS     | TH EXPLORATION LLC       | 1/8+    | 221A 303       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*25290       | 12-7-22 | E   | LEWIS L LAKE AND CATHIE K LAKE           | TH EXPLORATION LLC       | 1/8+    | 221A 878       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*25291       | 12-7-22 | E   | ROBERT G MILLS AND JOANIE SCHMIDT MILLS  | TH EXPLORATION LLC       | 1/8+    | 221A 867       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*25297       | 12-7-22 | E   | ERIC N SCHMIDT                           | TH EXPLORATION LLC       | 1/8+    | 221A 870       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*25298       | 12-7-22 | E   | JACK F BLAND                             | TH EXPLORATION LLC       | 1/8+    | 221A 880       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*25299       | 12-7-22 | E   | HARVEY I SUROSKY AND CONNIE D SUROSKY    | TH EXPLORATION LLC       | 1/8+    | 221A 872       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*25722       | 12-7-22 | E   | TODD A KELLER AND TERRI K KELLER         | TH EXPLORATION LLC       | 1/8+    | 223A 536       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*26895       | 12-7-22 | E   | SHARI L MOELLENDICK                      | TH EXPLORATION LLC       | 1/8+    | 225A 781       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*26926       | 12-7-22 | E   | JOHN R BLAND AND ALITA BLAND             | TH EXPLORATION LLC       | 1/8+    | 226A 415       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27034       | 12-7-22 | E   | KENNETH T CHAPMAN AND LYNN E CHAPMAN     | TH EXPLORATION LLC       | 1/8+    | 226A 777       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27035       | 12-7-22 | E   | BONNIE L THORNE AND RONALD E THORNE      | TH EXPLORATION LLC       | 1/8+    | 226A 779       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27036       | 12-7-22 | E   | WILDA V WELLS                            | TH EXPLORATION LLC       | 1/8+    | 226A 781       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27037       | 12-7-22 | E   | DIANE R MOLNAR                           | TH EXPLORATION LLC       | 1/8+    | 226A 783       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27038       | 12-7-22 | E   | LILA LOU PETTIT AND THOMAS RAY PETTIT    | TH EXPLORATION LLC       | 1/8+    | 226A 787       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27039       | 12-7-22 | E   | LEONARD L & CONNIE PARSONS               | TH EXPLORATION LLC       | 1/8+    | 226A 785       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27040       | 12-7-22 | E   | MARGARET COLLEEN MORRIS                  | TH EXPLORATION LLC       | 1/8+    | 226A 789       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27041       | 12-7-22 | E   | LINDA K KASPER AND RONALD C KASPER       | TH EXPLORATION LLC       | 1/8+    | 226A 791       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27093       | 12-7-22 | E   | ALLEN LLOYD PARSONS AND HAO BAK LY       | TH EXPLORATION LLC       | 1/8+    | 227A 80        | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27151       | 12-7-22 | E   | CAROL ANN CHAMBERS                       | TH EXPLORATION LLC       | 1/8+    | 228A 211       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27187       | 12-7-22 | E   | JOYCE E ELLIOTT AND BERNARD J BAKA JR    | TH EXPLORATION LLC       | 1/8+    | 228A 305       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27188       | 12-7-22 | E   | ROBERT G KIMBLE JR AND TAMERA L KIMBLE   | TH EXPLORATION LLC       | 1/8+    | 228A 307       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27189       | 12-7-22 | E   | LINDA R HADFIELD                         | TH EXPLORATION LLC       | 1/8+    | 228A 309       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27252       | 12-7-22 | E   | JASON R HAMANN AND PENNY YU              | TH EXPLORATION LLC       | 1/8+    | 228A 758       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27254       | 12-7-22 | E   | JOYCE M CORE AND DOUGLAS L CORE          | TH EXPLORATION LLC       | 1/8+    | 228A 754       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27255       | 12-7-22 | E   | J HOWARD MYERS                           | TH EXPLORATION LLC       | 1/8+    | 228A 752       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27287       | 12-7-22 | E   | RANDALL G KIMBLE                         | TH EXPLORATION LLC       | 1/8+    | 229A 56        | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27518       | 12-7-22 | E   | JOHN KEATING AND PAMELA KEATING          | TH EXPLORATION LLC       | 1/8+    | 230A 654       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27519       | 12-7-22 | E   | JAMES KEATING AND JOY KEATING            | TH EXPLORATION LLC       | 1/8+    | 230A 654       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27801       | 12-7-22 | E   | JOHN ERIC MOELLENDICK                    | TH EXPLORATION LLC       | 1/8+    | 232A 151       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*27885       | 12-7-22 | E   | SCOTT W HAMANN AND MELISSA A HAMANN      | TH EXPLORATION LLC       | 1/8+    | 232A 712       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28027       | 12-7-22 | E   | DOUGLAS A KIMBLE AND ALMA I KIMBLE       | TH EXPLORATION LLC       | 1/8+    | 233A 923       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28070       | 12-7-22 | E   | MABEL J WILLIAMS                         | TH EXPLORATION LLC       | 1/8+    | 234A 460       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28071       | 12-7-22 | E   | JOHN J WILLIAMS AND NANCY JEAN WILLIAMS  | TH EXPLORATION LLC       | 1/8+    | 234A 462       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28082       | 12-7-22 | E   | LUTHER RAY CROOKS                        | TH EXPLORATION LLC       | 1/8+    | 234A 621       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28083       | 12-7-22 | E   | LINDA L PYLES                            | TH EXPLORATION LLC       | 1/8+    | 234A 619       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28084       | 12-7-22 | E   | LARRY MIKE HUGGINS                       | TH EXPLORATION LLC       | 1/8+    | 234A 617       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28103       | 12-7-22 | E   | TIMOTHY HUGGINS                          | TH EXPLORATION LLC       | 1/8+    | 234A 615       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28104       | 12-7-22 | E   | KENNETH R HUGGINS AND OSIE J HUGGINS     | TH EXPLORATION LLC       | 1/8+    | 234A 613       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28105       | 12-7-22 | E   | RALPH HUGGINS                            | TH EXPLORATION LLC       | 1/8+    | 234A 611       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28106       | 12-7-22 | E   | DONNA HIGHT                              | TH EXPLORATION LLC       | 1/8+    | 234A 607       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28107       | 12-7-22 | E   | GAIL YOHO                                | TH EXPLORATION LLC       | 1/8+    | 234A 609       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28175       | 12-7-22 | E   | JOHN LUCAS JR                            | TH EXPLORATION LLC       | 1/8+    | 234A 633       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28176       | 12-7-22 | E   | TAMMY LYNN LUCAS                         | TH EXPLORATION LLC       | 1/8+    | 234A 631       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28177       | 12-7-22 | E   | CRYSTAL KENDOZIERSKI                     | TH EXPLORATION LLC       | 1/8+    | 234A 635       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28178       | 12-7-22 | E   | DAVID J GUNN SR AND MARGARET V GUNN      | TH EXPLORATION LLC       | 1/8+    | 234A 629       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28220       | 12-7-22 | E   | DEBRA LYNN YOUNG AND DONALD D YOUNG      | TH EXPLORATION LLC       | 1/8+    | 235A 548       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28221       | 12-7-22 | E   | NANCY F WILKERSON AND RONALD WILKERSON   | TH EXPLORATION LLC       | 1/8+    | 235A 550       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28233       | 12-7-22 | E   | ALICE WORLEY                             | TH EXPLORATION LLC       | 1/8+    | 235A 552       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28234       | 12-7-22 | E   | EPHROM WALTER YOUNG                      | TH EXPLORATION LLC       | 1/8+    | 236A 208       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28291       | 12-7-22 | E   | BOBBY MYERS                              | TH EXPLORATION LLC       | 1/8+    | 236A 214       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28292       | 12-7-22 | E   | DAWNITA J MOORE                          | TH EXPLORATION LLC       | 1/8+    | 236A 216       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28293       | 12-7-22 | E   | JESSE J MURAVSKY                         | TH EXPLORATION LLC       | 1/8+    | 236A 218       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28294       | 12-7-22 | E   | JUDY MORRIS                              | TH EXPLORATION LLC       | 1/8+    | 236A 220       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28330       | 12-7-22 | E   | TAMMY SUE CALLAHAN AND JESSE CALLAHAN    | TH EXPLORATION LLC       | 1/8+    | 236A 212       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28331       | 12-7-22 | E   | LYLE EUGENE PARSONS                      | TH EXPLORATION LLC       | 1/8+    | 236A 222       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28339       | 12-7-22 | E   | KAREN S STERN ATER                       | TH EXPLORATION LLC       | 1/8+    | 236A 210       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28438       | 12-7-22 | E   | RICHARD D LASHHORN II AND SHAUN LASHHORN | TH EXPLORATION LLC       | 1/8+    | 237A 360       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28511       | 12-7-22 | E   | ROBERT L BLAKE JR AND ANGELA BLAKE       | TH EXPLORATION LLC       | 1/8+    | 237A 358       | N/A   | N/A            | N/A        | N/A  | N/A                                     | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28516       | 12-7-22 | E   | JOYCE SUE WILLIAMS                       | TH EXPLORATION LLC       | 1/8+    | 237A 362       | N/A   | N/A            | N/A        |  |   |  |  |   |   |  |  |   |   |     |

| Lease ID       | TMP     | Tag | Grantor, Lessor, Etc.                 | Grantee, Lessee, Etc.  | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment                                     | Assignment  | Assignment   | Assignment   | Assignment  | Assignment  | Assignment   | Assignment                             | Assignment  | Assignment  |     |
|----------------|---------|-----|---------------------------------------|------------------------|---------|----------------|------------|------------|------------|--|---|--|--|---|---|--|--|---|---|-----|
| 10*28759       | 12-7-22 | E   | VIVIAN J MORLEDGE                     | TH EXPLORATION LLC     | 1/8+    | 245A 361       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28827       | 12-7-22 | E   | DEBRA JEAN GUMP                       | TH EXPLORATION LLC     | 1/8+    | 239A 40        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28841       | 12-7-22 | E   | DEBRA LYNN COLE                       | TH EXPLORATION LLC     | 1/8+    | 239A 140       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28842       | 12-7-22 | E   | DONNA SUE DOYEL                       | TH EXPLORATION LLC     | 1/8+    | 239A 142       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28863       | 12-7-22 | E   | JACKIE BACHIE                         | TH EXPLORATION LLC     | 1/8+    | 239A 192       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*28972       | 12-7-22 | E   | CHRISTOPHER CROOKS AND KATRINA CROOKS | TH EXPLORATION LLC     | 1/8+    | 239A 864       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*29529       | 12-7-22 | E   | TERRY CROOKS                          | TH EXPLORATION LLC     | 1/8+    | 250A 458       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*30543       | 12-7-22 | E   | DARRICK SCOTT WILLIAMS                | TH EXPLORATION LLC     | 1/8+    | 257A 764       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*31435       | 12-7-22 | E   | HENRY AND NANCY GARNER                | J A PHILLIPS           | 1/8+    | 55 394         | N/A        | N/A        | N/A        | J A Phillips to South Penn Oil Company: 56/284 | South Penn Oil Company to South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| 10*39146       | 12-7-22 | E   | CHAD GONCHOFF                         | TH EXPLORATION LLC     | 1/8+    | 260A 472       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*39246       | 12-7-22 | E   | CONNIE L COLVIN AND DUANE COLVIN      | TH EXPLORATION LLC     | 1/8+    | 260A 845       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*39250       | 12-7-22 | E   | STAR DUPERIOR AND ALLAN J DUPERIOR    | TH EXPLORATION LLC     | 1/8+    | 261A 126       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*39365       | 12-7-22 | E   | JERRY CURTIS HUGGINS                  | TH EXPLORATION LLC     | 1/8+    | 262A 662       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*31435       | 12-7-11 | H   | HENRY AND NANCY GARNER                | J A PHILLIPS           | 1/8+    | 55 394         | N/A        | N/A        | N/A        | J A Phillips to South Penn Oil Company: 56/284 | South Penn Oil Company to South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| **FORCE POOL** | 12-9-22 | J   | THOMAS E GARNER                       | EQT PRODUCTION COMPANY | 1/8+    | 255A 816       |            |            |            |  |   |  |  | **FORCE POOL**  |   |  |  |   |   |     |
| **FORCE POOL** | 12-9-22 | J   | LARRY D GARNER                        | EQT PRODUCTION COMPANY | 1/8+    | 255A 829       |            |            |            |  |   |  |  | **FORCE POOL**  |   |  |  |   |   |     |
| 10*31435       | 12-7-12 | J   | HENRY AND NANCY GARNER                | J A PHILLIPS           | 1/8+    | 55 394         | N/A        | N/A        | N/A        | J A Phillips to South Penn Oil Company: 56/284 | South Penn Oil Company to South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| 10*31495       | 12-2-23 | M   | HENRY AND NANCY GARNER                | J A PHILLIPS           | 1/8+    | 55 394         | N/A        | N/A        | N/A        | J A Phillips to South Penn Oil Company: 56/284 | South Penn Oil Company to South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| 10*21095       | 12-2-23 | O   | THOMAS E GARNER AND BILLIE J GARNER   | TH EXPLORATION LLC     | 1/8+    | 200A 385       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*21643       | 12-2-23 | O   | LARRY D GARNER                        | TH EXPLORATION LLC     | 1/8+    | 200A 393       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*31435       | 12-2-23 | O   | HENRY AND NANCY GARNER                | J A PHILLIPS           | 1/8+    | 55 394         | N/A        | N/A        | N/A        | J A Phillips to South Penn Oil Company: 56/284 | South Penn Oil Company to South Penn Natural Gas Company: 33A/455 | South Penn Natural Gas Company to Dallis Snyder & Sam Beren dba Snyder & Beren: 39A/33 | Dallis Snyder & Muriel C Snyder, Sam Beren & Sarah Beren, dba Snyder and Beren to John H Robinson & George F Eagon: 39A/38 | John H Robinson, Blanche Eagon, Est of George F Eagon, decd, Mildred M Lartigue, Carl L Eagon, Elva Robinson, Est of John H Robinson, decd, & Mary Ellen Davis to Elva Robinson & Mary Ellen Davis: 43A/440 | Elva Robinson & Mary Ellen Davis to Andrew L Henry, Charles E Reed & Harry R Cronin: 44A/92 | Katherine A & Harry R Cronin Jr to Charles E & Kathryn C Reed: 51A/241 | Kathryn C Reed to Carl Perkins: 55A/54 | Carl & Dorothy Louise Perkins to Perkins Oil and Gas Inc: 84A/9 | Perkins Oil & Gas Inc to TH Exploration LLC: 251A/463 |     |
| 10*22571       | 12-2-21 | Q   | LINDA M YOHO                          | TH EXPLORATION LLC     | 1/8+    | 209A 281       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*23019       | 12-2-21 | Q   | JODI LYNN PAULEY                      | TH EXPLORATION LLC     | 1/8+    | 209A 223       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*23186       | 12-2-21 | Q   | RODNEY C BAXTER AND MARY SUE BAXTER   | TH EXPLORATION LLC     | 1/8+    | 210A 401       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*23191       | 12-2-21 | Q   | MARY JO KIBBEE AND VINCENT KIBBEE II  | TH EXPLORATION LLC     | 1/8+    | 210A 613       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*23297       | 12-2-21 | Q   | JUDITH A WILLIAMS                     | TH EXPLORATION LLC     | 1/8+    | 211A 228       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |
| 10*23745       | 12-2-21 | Q   | JENNIFER ANN YOHO                     | TH EXPLORATION LLC     | 1/8+    | 213A 699       | N/A        | N/A        | N/A        | N/A  | N/A   | N/A  | N/A  | N/A   | N/A   | N/A  | N/A                                    | N/A   | N/A   | N/A |

| Lease ID | TMP       | Tag | Grantor, Lessor, Etc.                           | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment   | Assignment   | Assignment   | Assignment   | Assignment  | Assignment  | Assignment  |   |   |
|----------|-----------|-----|---|----------------------------|---------|----------------|------------|------------|------------|------------|------------|--|--|--|--|---|---|---|---|---|
| 10*26900 | 12-2-21   | Q   | NINA K ALTHOFF AND RONALD D ALTHOFF             | TH EXPLORATION LLC         | 1/8+    | 225A 778       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   |   |   |
| 10*29362 | 12-2-21   | Q   | STARIA K RICHMOND                               | TH EXPLORATION LLC         | 1/8+    | 247A 282       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   |   |   |
| 10*30216 | 12-2-21   | Q   | STONE HILL MINERALS HOLDINGS LLC                | TH EXPLORATION LLC         | 1/8+    | 254A 335       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   |   |   |
| 10*39276 | 12-2-21   | Q   | THE PYETT TRUST VICK M FERRIS TRUSTEE           | TH EXPLORATION LLC         | 1/8+    | 261A 880       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   |   |   |
| 10*39463 | 12-3-4.7  | V   | J P COOPER ET AL                                | SOUTH PENN OIL COMPANY     | 1/8+    | 56 245         | N/A        | N/A        | N/A        | N/A        | N/A        | South Penn Oil Company to Hope Natural Gas Company: 9A/227 | Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387        | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69 | Consolidated Gas Transmission Corp to CNG Development Company: 67A/452 | Merger - CNG Development Company merged with and into CNG Producing Company Eff. 1/1/1991               | Name Change - CNG Producing Company changed name into Dominion Exploration & Producing Inc. - 5/10/2000 | Merger - Dominion Exploration & Production Inc merger with and into Consol Gas Company: CB 13/108 | Merger - Consol Gas Company merged with and into CNX Gas Company LLC: MB 96/307 | CNX Gas Company LLC to TH Exploration LLC: 270A/479 |
| 10*18205 | 12-2-14.2 | W   | MELUSSA PAINTER AND SHAUN PAINTER               | TH EXPLORATION LLC         | 1/8+    | 927 639        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*18216 | 12-2-14.2 | W   | BRUCE EDWARD BAILEY JR AND DARA BAILEY          | TH EXPLORATION LLC         | 1/8+    | 929 99         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*19484 | 12-2-14.2 | W   | FREDRIC & BETTY RICHTER                         | TH EXPLORATION LLC         | 1/8+    | 941 235        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*19485 | 12-2-14.2 | W   | ELIZABETH A HARTLE                              | TH EXPLORATION LLC         | 1/8+    | 941 233        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*19643 | 12-2-14.2 | W   | PATRICIA LOUISE CROW AND HOY GLENN CROW         | TH EXPLORATION LLC         | 1/8+    | 944 101        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23349 | 12-2-14.2 | W   | LYNN ELLEN BARCUS AND PAUL E BARCUS JR          | TH EXPLORATION LLC         | 1/8+    | 205A 877       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23403 | 12-2-14.2 | W   | JAN LEA O'DONNELL AND KELLY O'DONNELL           | TH EXPLORATION LLC         | 1/8+    | 988 439        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23426 | 12-2-14.2 | W   | STEVEN L & CAROL J NEWMAN                       | TH EXPLORATION LLC         | 1/8+    | 211A 335       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23702 | 12-2-14.2 | W   | BRAD EYNON                                      | TH EXPLORATION LLC         | 1/8+    | 988 436        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*23836 | 12-2-14.2 | W   | JON NEWMAN & SUSAN NEWMAN                       | TH EXPLORATION LLC         | 1/8+    | 212A 32        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27186 | 12-2-14.2 | W   | LAURA J MAY AND ROGER A MAY                     | TH EXPLORATION LLC         | 1/8+    | 988 433        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27298 | 12-2-14.2 | W   | ROBERT M MCCARDLE & NANCY R MCCARDLE            | TH EXPLORATION LLC         | 1/8+    | 1015 152       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27435 | 12-2-14.2 | W   | ROHN J BOWERS MARTIN                            | TH EXPLORATION LLC         | 1/8+    | 1058 568       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27439 | 12-2-14.2 | W   | GERALD H COOPER                                 | TH EXPLORATION LLC         | 1/8+    | 230A 660       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27444 | 12-2-14.2 | W   | GREGORY T COOPER AND SUSAN COOPER               | TH EXPLORATION LLC         | 1/8+    | 1058 572       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27521 | 12-2-14.2 | W   | GASPARE A INGRASSELINO                          | TH EXPLORATION LLC         | 1/8+    | 234A 472       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27569 | 12-2-14.2 | W   | ROBERT LOHR                                     | TH EXPLORATION LLC         | 1/8+    | 1050 484       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27897 | 12-2-14.2 | W   | CAROL VASS                                      | TH EXPLORATION LLC         | 1/8+    | 1063 609       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27898 | 12-2-14.2 | W   | PAUL G FOX AND CYNTHIA G FOX                    | TH EXPLORATION LLC         | 1/8+    | 232A 346       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*27959 | 12-2-14.2 | W   | STONE HILL MINERALS HOLDINGS LLC                | TH EXPLORATION LLC         | 1/8+    | 1064 145       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | N/A   | N/A   | N/A   | N/A   |   |
| 10*39461 | 12-2-14.2 | W   | JAMES M PARSONS                                 | SOUTH PENN OIL COMPANY     | 1/8+    | 233A 664       | N/A        | N/A        | N/A        | N/A        | N/A        | South Penn oil Company to Hope Natural Gas Company: 9A/227 | Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387        | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69 | Consolidated Gas Transmission Corp to CNG Development Company: 67A/453 | Name Change - CNG Producing Company changed name into Dominion Exploration & Producing Inc. - 5/10/2000 | Merger - Dominion Exploration & Production Inc merger with and into Consol Gas Company: CB 13/108       | Merger - Consol Gas Company merged with and into CNX Gas Company LLC: MB 96/307                   | CNX Gas Company LLC to TH Exploration LLC: 270A/479                             |   |
| 10*39461 | 12-2-14.3 | Z   | JAMES M PARSONS                                 | SOUTH PENN OIL COMPANY     | 1/8+    | 73 195         | N/A        | N/A        | N/A        | N/A        | N/A        | South Penn oil Company to Hope Natural Gas Company: 9A/227 | Hope Natural Gas Company to Consolidated Gas Supply Corp: 233/387        | Consolidated Gas Supply Corp to Consolidated Gas Transmission Corp: 66A/69 | Consolidated Gas Transmission Corp to CNG Development Company: 67A/453 | Name Change - CNG Producing Company changed name into Dominion Exploration & Producing Inc. - 5/10/2000 | Merger - Dominion Exploration & Production Inc merger with and into Consol Gas Company: CB 13/108       | Merger - Consol Gas Company merged with and into CNX Gas Company LLC: MB 96/307                   | CNX Gas Company LLC to TH Exploration LLC: 270A/479                             |   |
| 10*31441 | 5-26-12.1 | BB  | JASON AND S M PARSONS                           | SOUTH PENN OIL COMPANY     | 1/8+    | 59 3           | N/A        | N/A        | N/A        | N/A        | N/A        | South Penn oil Company to Tri-State Gas Company: 80/150    | Tri-State Gas Company to The Manufacturers Light & Heat Company: 244/373 | The Manufacturers Light & Heat Company to Hundred Gas Company: 401/89      | Duane M Snider dba Hundred Gas Company to Carl D Perkins: 451/168      | Carl D Perkins to Perkins Oil and Gas Inc: 583/72   | Perkins Oil & Gas Inc to TH Exploration LLC: 46/190   |   |   |   |
| 10*14786 | 5-25-17   | EE  | TWILA O WHIPKEY                                 | GASTAR EXPLORATION USA INC | 1/8+    | 799 61         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | Merger - Gastar Exploration USA Inc with and into Gastar Exploration, Inc: 21/41                        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1   | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563   |   |   |
| 10*14797 | 5-25-17   | EE  | ORVILLE YOUNG                                   | GASTAR EXPLORATION USA INC | 1/8+    | 800 598        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | Merger - Gastar Exploration USA Inc with and into Gastar Exploration, Inc: 21/41                        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1   | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563   |   |   |
| 10*14822 | 5-25-17   | EE  | ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE | GASTAR EXPLORATION USA INC | 1/8+    | 876 463        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144  | Merger - Gastar Exploration USA Inc with and into Gastar Exploration, Inc: 21/41                        | Gastar Exploration USA Inc to TH Exploration II LLC: 36/9   | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563                         |   |

| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.                          | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment   | Assignment  | Assignment   |  |   |  |  |
|----------|---------|-----|--|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|---|--|--|---|--|--|
| 10*14823 | 5-25-17 | EE  | SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE | GASTAR EXPLORATION USA INC | 1/8+    | 876 459        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144  | Merger - 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: 43/563   |  |  |
| 10*17195 | 5-25-17 | EE  | PATRICIA HARTMAN                               | GASTAR EXPLORATION USA INC | 1/8+    | 695 317        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17196 | 5-25-17 | EE  | DELBERT R. MONTGOMERY                          | GASTAR EXPLORATION USA INC | 1/8+    | 695 311        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17197 | 5-25-17 | EE  | GLORIA J. SIMMONS HAROLD SIMMONS               | GASTAR EXPLORATION USA INC | 1/8+    | 695 313        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17199 | 5-25-17 | EE  | PAMELA L DRAZIC AND JEFFREY DRAZIC             | GASTAR EXPLORATION USA INC | 1/8+    | 695 315        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17200 | 5-25-17 | EE  | STEPHANIE L BATES                              | GASTAR EXPLORATION USA INC | 1/8+    | 697 156        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17201 | 5-25-17 | EE  | DENISE A GALE                                  | GASTAR EXPLORATION USA INC | 1/8+    | 697 395        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17202 | 5-25-17 | EE  | JANE GALE                                      | GASTAR EXPLORATION USA INC | 1/8+    | 697 385        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17203 | 5-25-17 | EE  | BARRY RAY MOORE                                | GASTAR EXPLORATION USA INC | 1/8+    | 697 387        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |
| 10*17204 | 5-25-17 | EE  | CLARENCE RICHARD ZESIGER & MARY ZESIGER        | GASTAR EXPLORATION USA INC | 1/8+    | 697 391        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110                  | Statoil USA Onshore Properties Inc to SWN Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238 | SWN Production Company LLC to TH Exploration LLC: 41/256 |

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|----------|---------|-----|---|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|------------|--|---|---|--|---|---|--|--|
| 10*17206 | 5-25-17 | EE  | M VIRGINIA & EDWARD C MARSH                     | GASTAR EXPLORATION USA INC | 1/8+    | 697 399        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17207 | 5-25-17 | EE  | DEBORAH K. KLIMASZEWSKI FRANK KLIMASZEWSKI, SR. | GASTAR EXPLORATION USA INC | 1/8+    | 697 389        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17210 | 5-25-17 | EE  | MARILYN NOEL                                    | GASTAR EXPLORATION USA INC | 1/8+    | 697 393        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17211 | 5-25-17 | EE  | GARY WAYNE ZESIGER & VITORINA ZESIGER           | GASTAR EXPLORATION USA INC | 1/8+    | 697 397        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17212 | 5-25-17 | EE  | DARRELL NEWLAND LYDIA NEWLAND                   | GASTAR EXPLORATION USA INC | 1/8+    | 697 158        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*17213 | 5-25-17 | EE  | CAROL DEEN GARDNER                              | GASTAR EXPLORATION USA INC | 1/8+    | 697 154        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Statoil USA Onshore Properties Inc to TH Exploration LLC: 41/238  | SWN Production Company LLC to TH Exploration LLC: 41/256 |  |
| 10*18275 | 5-25-17 | EE  | BETTY JEAN NEELY                                | TH EXPLORATION LLC         | 1/8+    | 929 60         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*18366 | 5-25-17 | EE  | MARY LOU WILSON AND STANLEY D WILSON            | TH EXPLORATION LLC         | 1/8+    | 931 311        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*18369 | 5-25-17 | EE  | MICHAEL WILSON AIF                              | TH EXPLORATION LLC         | 1/8+    | 931 303        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*18370 | 5-25-17 | EE  | CRAIG ALAN YOHO AND DONNA M YOHO                | TH EXPLORATION LLC         | 1/8+    | 931 300        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*18379 | 5-25-17 | EE  | SAMUEL D YOHO                                   | TH EXPLORATION LLC         | 1/8+    | 932 439        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*19540 | 5-25-17 | EE  | DAVID N DEVICK TRUSTEE OF THE TONI JO MASON     | TH EXPLORATION LLC         | 1/8+    | 942 53         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*19652 | 5-25-17 | EE  | LIVING TRUST                                    | TH EXPLORATION LLC         | 1/8+    | 944 108        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*19903 | 5-25-17 | EE  | ERICA M MASON                                   | TH EXPLORATION LLC         | 1/8+    | 948 236        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*22008 | 5-25-17 | EE  | JACK R HAMMERS                                  | TH EXPLORATION LLC         | 1/8+    | 953 304        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*22025 | 5-25-17 | EE  | PAUL F HAMMERS                                  | TH EXPLORATION LLC         | 1/8+    | 960 544        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*22129 | 5-25-17 | EE  | MARK EUGENE YOHO & MARY YOHO                    | TH EXPLORATION LLC         | 1/8+    | 961 459        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*22441 | 5-25-17 | EE  | JANICE N HAUDENSCHILT                           | TH EXPLORATION LLC         | 1/8+    | 963 646        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*22510 | 5-25-17 | EE  | APRIL ROSE POSTLETHWAIT                         | TH EXPLORATION LLC         | 1/8+    | 964 432        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*23372 | 5-25-17 | EE  | DONNA V YOHO                                    | TH EXPLORATION LLC         | 1/8+    | 988 429        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*23373 | 5-25-17 | EE  | DEWEY A MILICIA                                 | TH EXPLORATION LLC         | 1/8+    | 1008 320       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*23446 | 5-25-17 | EE  | DANA MILICIA HUMPHREYS                          | TH EXPLORATION LLC         | 1/8+    | 1008 316       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*25627 | 5-25-17 | EE  | NICOLETTA MILICIA BLOODWORTH                    | TH EXPLORATION LLC         | 1/8+    | 1034 548       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A  |
| 10*27078 | 5-25-17 | EE  | CHESTNUT HOLDINGS INC                           | TH EXPLORATION LLC         | 1/8+    | 697 381        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Inc and Atinum Marcellus I LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC mered with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoil USA Onshore Properties Inc chanded its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141 | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |

| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.  | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment   | Assignment  | Assignment  | Assignment   | Assignment   | Assignment   | Assignment   |  |   |
|----------|---------|-----|--|----------------------------|---------|----------------|------------|------------|------------|------------|------------|------------|--|---|---|--|--|--|--|--|---|
| 10*27085 | 5-25-17 | EE  | DAPHNE HUFFMAN AND CHARLES HUFFMAN   | GASTAR EXPLORATION USA INC | 1/8+    | 697 383        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoil USA Onshore Properties Inc chened Its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141                   | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |   |
| 10*27086 | 5-25-17 | EE  | DONALD R NEWLAND AND SUZANNE NEWLAND PIKEWOOD ENERGY CORPORATION AN OHIO CORPORATION | GASTAR EXPLORATION USA INC | 1/8+    | 698 639        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 23/353 | Gastar Exploration USA Onshore Properties Inc: 27/311 | Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110 | Statoil USA Onshore Exchange Titleholder LLC: 33/424 | Merger - SWN Exchange Titleholder LLC merged with and into SWN Production Company LLC: CB 19/624 | Name Chane - Statoil USA Onshore Properties Inc chened Its name to Equinor USA Onshore Properties Inc: 2/427 | SWN Production Company LLC to TH Exploration LLC: 44/141                   | Equinor USA Onshore Properties Inc to TH Exploration LLC: 44/147 |   |
| 10*27714 | 5-25-17 | EE  |  | TH EXPLORATION LLC         | 1/8+    | 1060 572       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*14722 | 5-26-8  | FF  | HERBERT D MINOR  | TRIENERGY HOLDINGS, LLC    | 1/8+    | 724 200        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | TriEnergy Holdings LLC to NPAR LLC: 25/463                      | NPAR LLC to Chevron SA Inc: 26/269                   | NPAR LLC to Chevron USA Inc: 756/307   | Chevron USA Inc to Gastar Exploration Inc & Atinum Marcellus I LLC: 32/355 & 32/370                          | Gastar Exploration Inc to TH Exploration II LLC: 36/9                      | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |   |
| 10*14797 | 5-26-8  | FF  | ORVILLE YOUNG  | GASTAR EXPLORATION USA INC | 1/8+    | 800 598        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1                                      | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41                                   | Gastar Exploration Inc to TH Exploration II LLC: 36/9                      | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |   |
| 10*14816 | 5-26-8  | FF  | DWG OIL & GAS ACQUISITIONS LLC   | STONE ENERGY CORPORATION   | 1/8+    | 787 49         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | Stone Energy Corp to Gastar Exploration Inc & Atinum Marcellus I LLC: 31/113                                 | Gastar Exploration Inc to TH Exploration II LLC: 36/9                      | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |   |
| 10*17779 | 5-26-8  | FF  | GARY DOBBS AND SUSAN DOBBS   | TH EXPLORATION LLC         | 1/8+    | 938 3          | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18681 | 5-26-8  | FF  | RICHARD WHITE II & GLORIA J WHITE  | TH EXPLORATION LLC         | 1/8+    | 936 133        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18757 | 5-26-8  | FF  | CLAUDIA R SCHEEHLE   | TH EXPLORATION LLC         | 1/8+    | 938 464        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18758 | 5-26-8  | FF  | SHIRLEY M DORSEY AND WILLIAM DORSEY  | TH EXPLORATION LLC         | 1/8+    | 938 468        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18759 | 5-26-8  | FF  | SHARON E YOHO  | TH EXPLORATION LLC         | 1/8+    | 940 129        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18947 | 5-26-8  | FF  | CHARLES ROBERT MYERS   | TH EXPLORATION LLC         | 1/8+    | 940 129        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*19719 | 5-26-8  | FF  | SHIRLEY K WHITE  | TH EXPLORATION LLC         | 1/8+    | 944 581        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*22410 | 5-26-8  | FF  | STONE HILL MINERALS HOLDINGS LLC   | TH EXPLORATION LLC         | 1/8+    | 979 193        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*25629 | 5-26-8  | FF  | CHESTNUT HOLDINGS INC  | TH EXPLORATION LLC         | 1/8+    | 1034 542       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*14722 | 5-26-20 | GG  | HERBERT D MINOR  | TRIENERGY HOLDINGS, LLC    | 1/8+    | 724 200        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | TriEnergy Holdings LLC to NPAR LLC: 25/463                      | NPAR LLC to Chevron SA Inc: 26/269                   | NPAR LLC to Chevron USA Inc: 756/307   | Chevron USA Inc to Gastar Exploration Inc & Atinum Marcellus I LLC: 32/355 & 32/370                          | Gastar Exploration Inc to TH Exploration II LLC: 36/9                      | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |   |
| 10*14797 | 5-26-20 | GG  | ORVILLE YOUNG  | GASTAR EXPLORATION USA INC | 1/8+    | 800 598        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1  | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9            | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563 |
| 10*14816 | 5-26-20 | GG  | DWG OIL & GAS ACQUISITIONS LLC   | STONE ENERGY CORPORATION   | 1/8+    | 787 49         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | Stone Energy Corp to Gastar Exploration Inc & Atinum Marcellus I LLC: 31/113                                 | Gastar Exploration Inc to TH Exploration II LLC: 36/9                      | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563          |   |
| 10*17779 | 5-26-20 | GG  | GARY DOBBS AND SUSAN DOBBS   | TH EXPLORATION LLC         | 1/8+    | 938 3          | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18681 | 5-26-20 | GG  | RICHARD WHITE II & GLORIA J WHITE  | TH EXPLORATION LLC         | 1/8+    | 936 133        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18757 | 5-26-20 | GG  | CLAUDIA R SCHEEHLE   | TH EXPLORATION LLC         | 1/8+    | 938 464        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18758 | 5-26-20 | GG  | SHIRLEY M DORSEY AND WILLIAM DORSEY  | TH EXPLORATION LLC         | 1/8+    | 938 468        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18759 | 5-26-20 | GG  | SHARON E YOHO  | TH EXPLORATION LLC         | 1/8+    | 940 129        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*18947 | 5-26-20 | GG  | CHARLES ROBERT MYERS   | TH EXPLORATION LLC         | 1/8+    | 940 129        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*19719 | 5-26-20 | GG  | SHIRLEY K WHITE  | TH EXPLORATION LLC         | 1/8+    | 944 581        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*22410 | 5-26-20 | GG  | STONE HILL MINERALS HOLDINGS LLC   | TH EXPLORATION LLC         | 1/8+    | 979 193        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*25629 | 5-26-20 | GG  | CHESTNUT HOLDINGS INC  | TH EXPLORATION LLC         | 1/8+    | 1034 542       | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  |   |
| 10*14786 | 5-23-13 | JJ  | TWILA O WHIPKEY  | GASTAR EXPLORATION USA INC | 1/8+    | 799 61         | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1  | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9            | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563 |
| 10*14792 | 5-23-13 | JJ  | TIMOTHY YOHO   | GASTAR EXPLORATION USA INC | 1/8+    | 799 536        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 806/1  | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9            | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563 |
| 10*14822 | 5-23-13 | JJ  | ONWARD E BURGE TRUST STEPHEN W BURGE AS TRUSTEE                                      | GASTAR EXPLORATION USA INC | 1/8+    | 876 463        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144   | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9            | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563 |
| 10*14823 | 5-23-13 | JJ  | SARAH L BURGE TRUST STEPHEN W BURGE AS TRUSTEE                                       | GASTAR EXPLORATION USA INC | 1/8+    | 876 459        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A   | N/A   | N/A  | N/A  | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/144   | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9            | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563 |



| Lease ID | TMP     | Tag | Grantor, Lessor, Etc.             | Grantee, Lessee, Etc.      | Royalty | Deed Book/Page |     | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment | Assignment   | Assignment   |   |   |
|----------|---------|-----|-----------------------------------|----------------------------|---------|----------------|-----|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|--|--|---|---|
| 10*14969 | 5-23-13 | JJ  | REBECCA S WORD                    | GASTAR EXPLORATION USA INC | 1/8+    | 872            | 219 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/119 | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9 | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563 |
| 10*14970 | 5-23-13 | JJ  | GRACE EXLINE                      | GASTAR EXPLORATION USA INC | 1/8+    | 872            | 623 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | Gastar Exploration USA Inc to Atinum Marcellus I LLC: 35/119 | Name Change - Gastar Exploration USA Inc to Gastar Exploration, Inc: 21/41 | Gastar Exploration Inc to TH Exploration II LLC: 36/9 | Atinum Marcellus I LLC to TH Exploration II LLC: 43/563 |
| 10*18541 | 5-23-13 | JJ  | PATRICK P MCHENRY                 | TH EXPLORATION LLC         | 1/8+    | 933            | 649 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*18818 | 5-23-13 | JJ  | LUCILLE R MCHENRY                 | TH EXPLORATION LLC         | 1/8+    | 937            | 624 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*19732 | 5-23-13 | JJ  | CARL M MCHENRY AND PAMELA MCHENRY | TH EXPLORATION LLC         | 1/8+    | 944            | 469 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*19996 | 5-23-13 | JJ  | CHARLES D WOOD                    | TH EXPLORATION LLC         | 1/8+    | 947            | 589 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*21073 | 5-23-13 | JJ  | ARDITH R ROSE AND TOMMY E ROSE    | TH EXPLORATION LLC         | 1/8+    | 951            | 608 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*21074 | 5-23-13 | JJ  | MALCOLM E WOOD AND JOAN J WOOD    | TH EXPLORATION LLC         | 1/8+    | 951            | 610 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*21174 | 5-23-13 | JJ  | SHAWN M WOOD                      | TH EXPLORATION LLC         | 1/8+    | 952            | 190 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*21944 | 5-23-13 | JJ  | JILL A BECK                       | TH EXPLORATION LLC         | 1/8+    | 960            | 101 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*22434 | 5-23-13 | JJ  | EDWIN NELSON WOOD                 | TH EXPLORATION LLC         | 1/8+    | 963            | 637 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*22585 | 5-23-13 | JJ  | CYNTHIA L CHICK                   | TH EXPLORATION LLC         | 1/8+    | 966            | 102 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*24291 | 5-23-13 | JJ  | MARY MARTHA BELLE DOYLE           | TH EXPLORATION LLC         | 1/8+    | 1024           | 285 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*25065 | 5-23-13 | JJ  | COLBY G WOOD                      | TH EXPLORATION LLC         | 1/8+    | 1027           | 103 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*25066 | 5-23-13 | JJ  | RODGER A HENDERSON JR             | TH EXPLORATION LLC         | 1/8+    | 1027           | 97  | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |
| 10*27959 | 5-23-13 | JJ  | STONE HILL MINERALS HOLDINGS LLC  | TH EXPLORATION LLC         | 1/8+    | 1063           | 594 | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A        | N/A  | N/A  | N/A   | N/A   |



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

April 29, 2022

TH Exploration, LLC  
1320 S. University Dr Ste 500  
Ft Worth TX 76107

9489 0090 0027 6402 6047 81

---

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC - Elmer N-14HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose".  
Susan Rose  
Administrator

encl:

10/21/2022

## Track Another Package +

**Tracking Number:** 9489009000276402604781

[Remove X](#)

The delivery status of your item has not been updated as of May 10, 2022, 2:11 am. We apologize that it may arrive later than expected.

**USPS Tracking Plus® Available** ✓

### Awaiting Delivery Scan

May 10, 2022 at 2:11 am

Feedback

**Get Updates** ✓

---

**Text & Email Updates**



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**Return Receipt Electronic**



---

**Tracking History**



**May 10, 2022, 2:11 am**

Awaiting Delivery Scan

The delivery status of your item has not been updated as of May 10, 2022, 2:11 am. We apologize that it may arrive later than expected.

**May 9, 2022, 8:11 am**

Out for Delivery

FORT WORTH, TX 76107

**May 9, 2022, 8:00 am**  
Arrived at Post Office  
FORT WORTH, TX 76109

**May 8, 2022**  
In Transit to Next Facility

**May 6, 2022, 11:35 pm**  
Departed USPS Regional Facility  
FORT WORTH TX DISTRIBUTION CENTER

**May 6, 2022, 11:32 am**  
Arrived at USPS Regional Destination Facility  
FORT WORTH TX DISTRIBUTION CENTER

**May 2, 2022, 9:09 pm**  
Arrived at USPS Regional Origin Facility  
CHARLESTON WV PROCESSING CENTER

**May 2, 2022, 7:54 pm**  
Accepted at USPS Origin Facility  
CHARLESTON, WV 25305

**May 2, 2022**  
Pre-Shipment Info Sent to USPS, USPS Awaiting Item

Feedback

---

**USPS Tracking Plus®**



---

**Product Information**



---

**See Less** ^

**Can't find what you're looking for?**

10/21/2022



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

April 29, 2022

Equinor USA Onshore Properties, Inc.  
6300 Bridge Point Pkwy Bldg 2 Ste 100  
Austin TX 78730

9489 0090 0027 6402 6048 11

---

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in cursive script that reads "Susan Rose".

Susan Rose  
Administrator

encl:

10/21/2022

Tracking Number:

## 9489009000276402604811

Remove X

[Copy](#)   [Add to Informed Delivery](#)  
(<https://informedelivery.usps.com/>)

### Latest Update

Your item was delivered to an individual at the address at 11:30 am on June 6, 2022 in CHARLESTON, WV 25304.

Feedback

#### Delivered

**Delivered, Left with Individual**

CHARLESTON, WV 25304  
June 6, 2022, 11:30 am

#### No Access to Delivery Location

CHARLESTON, WV 25304  
June 4, 2022, 9:57 am

#### Departed USPS Regional Origin Facility

CHARLESTON WV PROCESSING CENTER  
June 3, 2022, 5:40 pm

#### Arrived at USPS Regional Origin Facility

CHARLESTON WV PROCESSING CENTER  
June 3, 2022, 9:44 am

#### In Transit to Next Facility

June 2, 2022

#### Departed USPS Regional Facility

OKLAHOMA CITY OK DISTRIBUTION CENTER  
May 30, 2022, 10:37 pm

10/21/2022

- **Arrived at USPS Regional Facility**  
OKLAHOMA CITY OK DISTRIBUTION CENTER  
May 14, 2022, 12:12 pm
- **Forwarded**  
AUSTIN, TX  
May 5, 2022, 9:09 am
- **Departed USPS Regional Facility**  
AUSTIN TX DISTRIBUTION CENTER  
May 4, 2022, 10:15 pm
- **Arrived at USPS Regional Destination Facility**  
AUSTIN TX DISTRIBUTION CENTER  
May 4, 2022, 2:15 pm
- **Arrived at USPS Regional Origin Facility**  
CHARLESTON WV PROCESSING CENTER  
May 2, 2022, 9:09 pm
- **Accepted at USPS Origin Facility**  
CHARLESTON, WV 25305  
May 2, 2022, 7:54 pm
- **Pre-Shipment Info Sent to USPS, USPS Awaiting Item**  
May 2, 2022
- **Hide Tracking History**

Feedback

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**Text & Email Updates**



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**Return Receipt Electronic**



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**USPS Tracking Plus®**



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**Product Information**



**See Less** ^

10/21/2022



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

April 29, 2022

EQT Production Company  
625 Liberty Ave Ste 1700  
Pittsburgh PA 15222

9489 0090 0027 6402 6048 28

---

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

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

Susan Rose  
Administrator

encl:

10/21/2022





May 19, 2022

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6402 6048 28.**

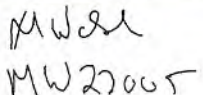
#### Item Details

|                            |  |
|----------------------------|--|
| <b>Status:</b>             | Delivered, Front Desk/Reception/Mail Room    |
| <b>Status Date / Time:</b> | May 4, 2022, 12:25 pm                        |
| <b>Location:</b>           | PITTSBURGH, PA 15222                         |
| <b>Postal Product:</b>     | First-Class Mail®                            |
| <b>Extra Services:</b>     | Certified Mail™<br>Return Receipt Electronic |

#### Shipment Details

|                |             |
|----------------|-------------|
| <b>Weight:</b> | 3lb, 10.8oz |
|----------------|-------------|

#### Recipient Signature

|                         |  |
|-------------------------|--|
| Signature of Recipient: |  |
| Address of Recipient:   | 625 Liberty  |

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

10/21/2022



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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

April 29, 2022

SWN Production Company, LLC  
10000 Energy Dr  
Spring TX 77389

9489 0090 0027 6402 6047 98

---

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 414-1239.

Sincerely,

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

Susan Rose  
Administrator

encl:

10/21/2022



May 19, 2022

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number: **9489 0090 0027 6402 6047 98**.

#### Item Details

|                            |  |
|----------------------------|--|
| <b>Status:</b>             | Delivered, Front Desk/Reception/Mail Room    |
| <b>Status Date / Time:</b> | May 4, 2022, 11:19 am                        |
| <b>Location:</b>           | MORGANTOWN, WV 26508                         |
| <b>Postal Product:</b>     | First-Class Mail®                            |
| <b>Extra Services:</b>     | Certified Mail™<br>Return Receipt Electronic |

#### Shipment Details

|                |            |
|----------------|------------|
| <b>Weight:</b> | 3lb, 9.4oz |
|----------------|------------|

#### Recipient Signature

|                         |                            |
|-------------------------|----------------------------|
| Signature of Recipient: | <i>Tammy</i><br>Tammy      |
| Address of Recipient:   | 1300 Fmt<br>Pleasant # 201 |

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

10/21/2022



VOID

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west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

April 29, 2022

Eric J. Booth  
421 7th St  
Glen Dale WV 26038

9489 0090 0027 6402 6048 04

---

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 414-1239.

Sincerely,

Susan Rose  
Administrator

encl:

10/21/2022



VOID

May 19, 2022

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6402 6048 04.**


**Item Details**

**Status:** Delivered, Individual Picked Up at Post Office  
**Status Date / Time:** May 5, 2022, 9:07 am  
**Location:** GLEN DALE, WV 26038  
**Postal Product:** First-Class Mail®  
**Extra Services:** Certified Mail™  
Return Receipt Electronic

**Shipment Details**

**Weight:** 3lb, 8.9oz

**Recipient Signature**

Signature of Recipient:   
Address of Recipient: 421 7TH ST  
GLEN DALE, WV 26038-1410

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

10/21/2022



VOID

west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

April 29, 2022

Daniel T. Booth  
PO Box 83  
Lost Creek WV 26041

9489 0090 0027 6402 6048 35

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 414-1239.

Sincerely,

Susan Rose  
Administrator

encl:

10/21/2022



May 19, 2022

VOID

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6402 6048 35.**

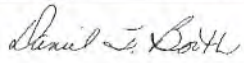
**Item Details**

|                            |  |
|----------------------------|--|
| <b>Status:</b>             | Delivered, Individual Picked Up at Post Office |
| <b>Status Date / Time:</b> | May 12, 2022, 9:19 am                          |
| <b>Location:</b>           | LOST CREEK, WV 26385                           |
| <b>Postal Product:</b>     | First-Class Mail®                              |
| <b>Extra Services:</b>     | Certified Mail™<br>Return Receipt Electronic   |

**Shipment Details**

**Weight:** 3lb, 9.6oz

**Recipient Signature**

|                                |   |
|--------------------------------|---|
| <b>Signature of Recipient:</b> | <br>Daniel T. Booth |
| <b>Address of Recipient:</b>   | P.O. Box 83   |

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

10/21/2022



VOID

west virginia department of environmental protection

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

Randall M. Albert, Chairman  
dep.wv.gov

April 29, 2022

Diane Beth Overdorff  
4655 Raven Court  
Hilliard OH 43026

9489 0090 0027 6402 6048 42

in transit  
5-7

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Elmer N-14HU


Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 414-1239.

Sincerely,

  
Susan Rose  
Administrator

encl:

10/21/2022



[Track Another Package +](#)

VOID

**Tracking Number:** 9489009000276402604842

[Remove X](#)

Your package will arrive later than expected, but is still on its way. It is currently in transit to the next facility.

**USPS Tracking Plus<sup>®</sup> Available** [v](#)

## In Transit, Arriving Late

May 7, 2022

Feedback

**Get Updates** [v](#)

---

**Text & Email Updates** [v](#)

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**Return Receipt Electronic** [v](#)

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**Tracking History** [^](#)

**May 7, 2022**

In Transit, Arriving Late

Your package will arrive later than expected, but is still on its way. It is currently in transit to the next facility.

**May 3, 2022, 7:17 pm**

Departed USPS Regional Destination Facility  
COLUMBUS OH DISTRIBUTION CENTER

10/21/2022

**May 3, 2022, 6:24 pm**

Arrived at USPS Regional Destination Facility  
COLUMBUS OH DISTRIBUTION CENTER

VOID

**May 3, 2022, 10:25 am**

Arrived at USPS Regional Destination Facility  
COLUMBUS OH DISTRIBUTION CENTER

**May 2, 2022, 9:09 pm**

Arrived at USPS Regional Origin Facility  
CHARLESTON WV PROCESSING CENTER

**May 2, 2022, 7:54 pm**

Accepted at USPS Origin Facility  
CHARLESTON, WV 25305

**May 2, 2022**

Pre-Shipment Info Sent to USPS, USPS Awaiting Item

Feedback

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**USPS Tracking Plus®**



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**Product Information**



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**See Less** ^

## Can't find what you're looking for?

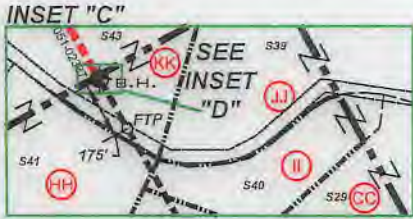
Go to our FAQs section to find answers to your tracking questions.

**FAQs**

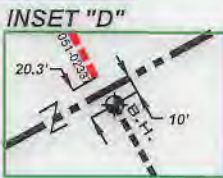
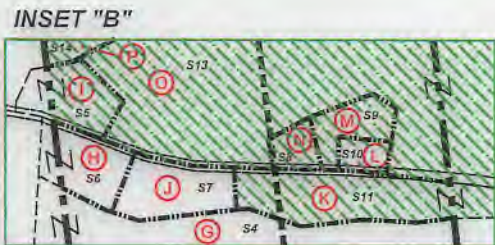
10/21/2022

**ELMER LEASE  
WELL N-14HU  
472.7041 ± ACRES**

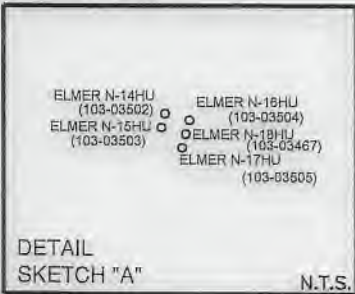
GRID NORTH



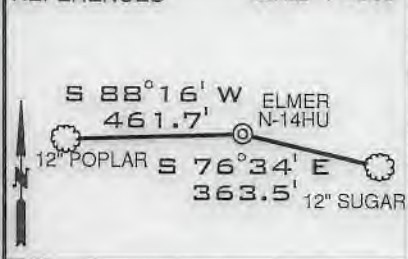
NOTE: L.P.1 and LTP are same point.



(+) DENOTES LOCATION ON UNITED STATES TOPOGRAPHIC MAPS



**REFERENCES SCALE 1"=500'**

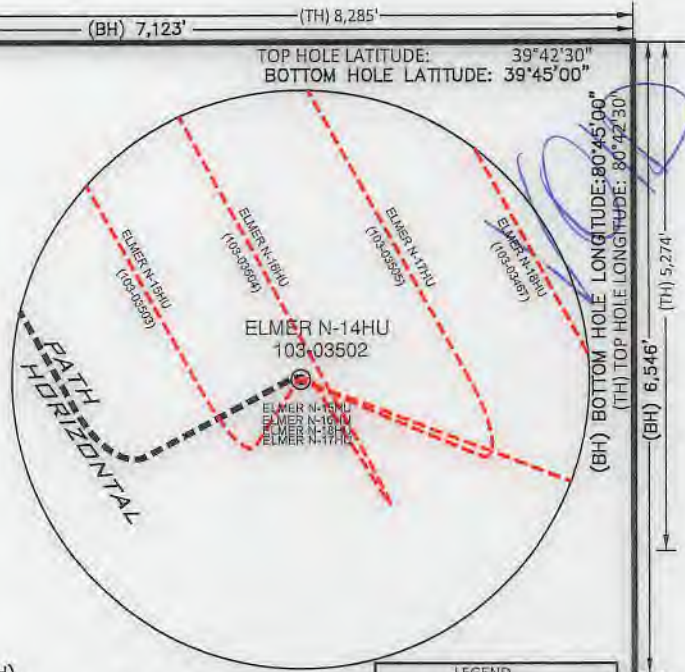


**Deep Wells Within 2400' of Proposed Well's Surface Location and/or 500' of Well Lateral**

| API          | OPERATOR                |
|--------------|-------------------------|
| 47-051-02337 | Tug Hill Operating, LLC |
| 47-103-03467 | Tug Hill Operating, LLC |
| 47-103-03505 | Tug Hill Operating, LLC |
| 47-103-03504 | Tug Hill Operating, LLC |
| 47-103-03503 | Tug Hill Operating, LLC |

| LINE | BEARING    | DISTANCE  |
|------|------------|-----------|
| L1   | N 42°32' E | 1843.03'  |
| L2   | N 67°54' E | 1408.38'  |
| L3   | S 64°03' W | 62.82'    |
| L4   | S 61°58' W | 1,751.73' |

| CURVE | CHORD BEARING | CHORD LENGTH | RADIUS   | ARC LENGTH |
|-------|---------------|--------------|----------|------------|
| C1    | S 77°42' W    | 142.75'      | 266.98'  | 144.51'    |
| C2    | N 73°35' W    | 182.28'      | 404.26'  | 193.51'    |
| C3    | N 53°07' W    | 227.81'      | 762.38'  | 228.57'    |
| C4    | N 36°45' W    | 423.64'      | 1448.61' | 425.16'    |



- 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 WETZEL COUNTY, WV IN JULY, 2022. COORDINATES AND WELL TIES BASED UPON DIFFERENTIAL GPS MEASUREMENTS.
  - WELL LOCATION REFERENCES ARE BASED UPON THE MAGNETIC MERIDIAN.
  - ALL DEEP WELLS WITHIN 1,000' ARE SHOWN ON THIS PLAT.
  - BOUNDARIES ALONG ROADWAYS ARE BASED UPON MEMORANDUM BY DICKIE, MCCAMEY & CHILCOTE, P.C. FILE 0056304.0401147

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

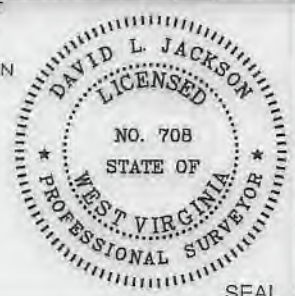
**SURFACE HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,393,822.46  
E) 522,498.07

**LANDING POINT 1**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,393,719.48  
E) 521,782.84

**BOTTOM HOLE**  
UTM. NAD83, ZONE 17  
IN METERS  
N) 4,398,045.80  
E) 519,269.82

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 1460  
Clarksburg, WV 26302  
304-623-5851

FILE NUMBER \_\_\_\_\_

DRAWING NUMBER ELMER\_N-14HU\_REV1

SCALE 1" = 2000'

MINIMUM DEGREE OF ACCURACY 1/200

PROVEN SOURCE OF ELEVATION SUBMETER MAPPING  
GRADE GPS

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

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

LOCATION ELEVATION 1276.50' WATERSHED (HUC 10) PROCTOR CREEK OF FRENCH CREEK - OHIO RIVER (HUC-10)  
DISTRICT PROCTOR COUNTY WETZEL  
QUADRANGLE WILEYVILLE 7.5' LEASE NUMBER \_\_\_\_\_ SEE WW-6A1 FORM

SURFACE OWNER ELNORA TUTTLE HRS ACREAGE 39.19

OIL & GAS ROYALTY OWNER ELNORA TUTTLE HRS - SEE WW-6A1 LEASE ACREAGE 39.19

PROPOSED WORK: DRILL X CONVERT \_\_\_ DRILL DEEPER \_\_\_ REDRILL \_\_\_ FRACTURE OR STIMULATE X PLUG OFF OLD FORMATION \_\_\_  
PERFORATE NEW FORMATION \_\_\_ OTHER PHYSICAL CHANGE (SPECIFY) \_\_\_\_\_

TARGET FORMATION POINT PLEASANT ESTIMATED DEPTH TVD: 11,871' TMD: 29,065'

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

10/21/2022

COPY NAME PERMIT

# ELMER LEASE WELL N-14HU 472.7041 ± ACRES

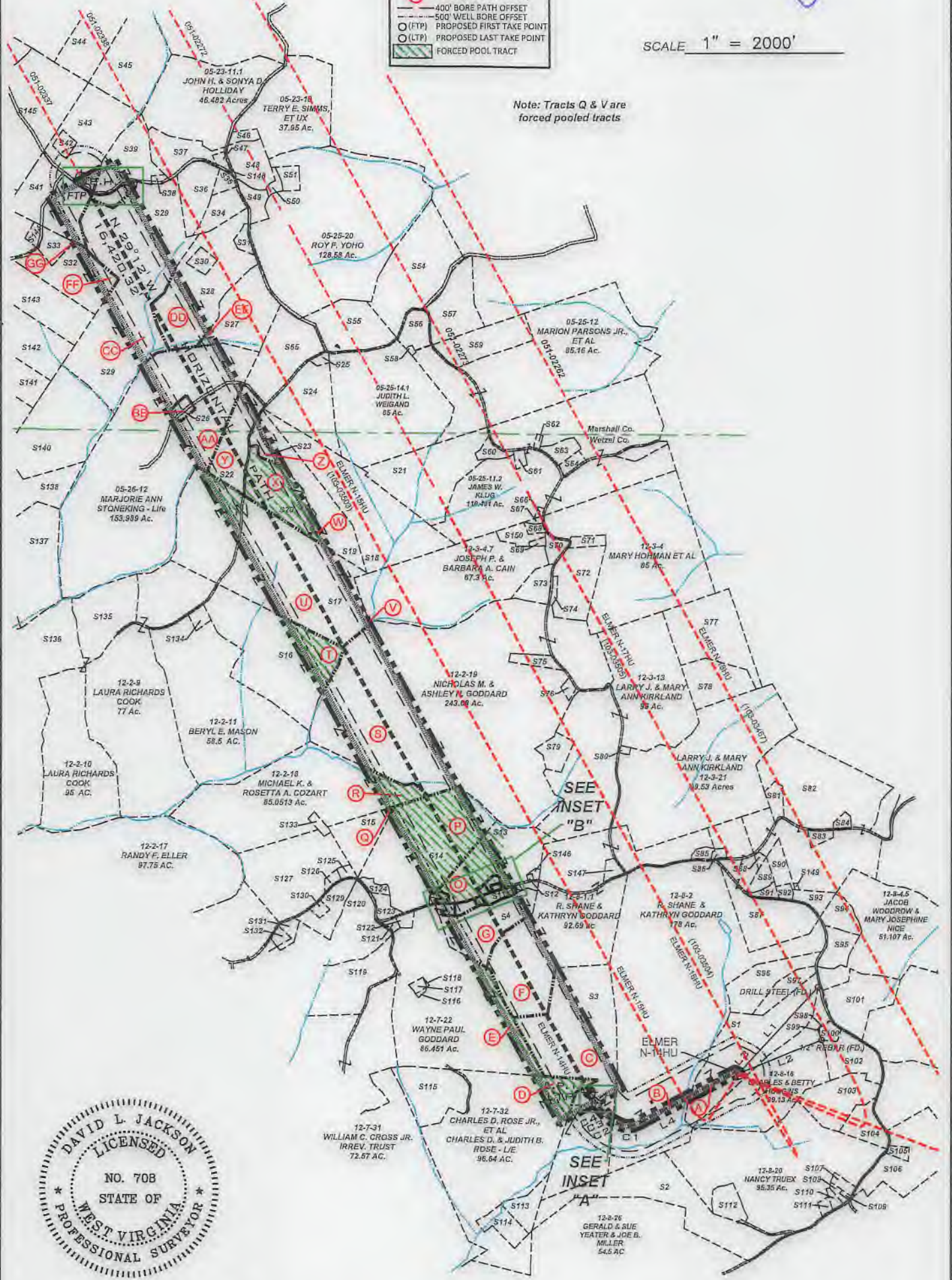
**LEGEND**

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

VOID

SCALE 1" = 2000'

Note: Tracts Q & V are forced pooled tracts



P.S. 708 *David L Jackson*

10/21/2022



## TUG HILL OPERATING

OPERATOR'S  
 WELL #: ELMER N-14HU  
 DISTRICT: Proctor  
 COUNTY: Wetzel  
 STATE: WV  
 API #: 47-103-03502

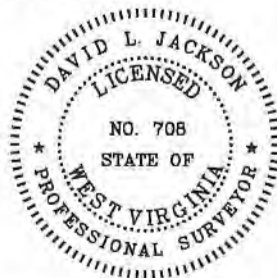
WELL PLAT  
 PAGE 2 OF 4  
 DATE: 07/26/2022

form ww6

**ELMER LEASE  
WELL N-14HU  
472.7041 ± ACRES**

| Tags | Number | Tax Map - Parcel | Surface Owner   | Acres  |
|------|--------|------------------|---|--------|
| A    | S1     | 12-8-15          | ELNORA TUTTLE HRS                                       | 39.19  |
|      | S2     | 12-8-20.5        | JOE MILLER, GERALD & SUE YEATER                         | 44.85  |
| C    | S3     | 12-8-1           | R. SHANE & KATHRYN GODDARD                              | 77     |
| G    | S4     | 12-7-13.1        | WAYNE PAUL GODDARD                                      | 18     |
| I    | S5     | 12-2-22.2        | DAVID A. & MANDY L TRUJEX                               | 1.186  |
| H    | S6     | 12-7-11          | JOSEPH R. VILLERS                                       | 1.5    |
| J    | S7     | 12-7-12          | JOSEPH R. VILLERS                                       | 1.6    |
| N    | S8     | 12-2-23.4        | SHARON HOWELL ET AL: GLORIA A. NICE - L/E               | 0.422  |
| M    | S9     | 12-7-23.3        | KENNETH W. GODDARD                                      | 0.766  |
| L    | S10    | 12-2-23.3        | KENNETH W. GODDARD                                      | 0.36   |
| K    | S11    | 12-3-26.1        | JOSEPH MARK KLUG  | 3.242  |
|      | S12    | 12-3-27          | CATHY A. PURPURA  | 0.227  |
| O    | S13    | 12-2-23          | DAVID A. NICE   | 21.7   |
| P    | S14    | 12-2-22          | DAVID A. NICE   | 54.66  |
| Q    | S15    | 12-2-24          | MICHAEL KENNETH & ROSETTA ANNETTE COZART                | 11.4   |
| T    | S16    | 12-2-12          | BERYL E. MASON  | 59.9   |
| U    | S17    | 12-2-13          | JAY S. BOOTH; DANIEL T. BOOTH & DIANE BETH OVERDORFF    | 100    |
|      | S18    | 12-2-14          | DAVID L CUNNINGHAM                                      | 56.23  |
| W    | S19    | 12-2-14.2        | JOHN G. JR & GERALDINE M. ROGERS                        | 22.007 |
| X    | S20    | 12-2-14.1        | SAMMY J. GREATHOUSE JR. ; SAMMY J. GREATHOUSE SR. - L/E | 18.67  |
|      | S21    | 05-25-11.4       | EDWARD W. KLUG, ETUX                                    | 32.787 |
| Y    | S22    | 05-25-15         | ROBERT S. KELLER, ETAL                                  | 15.073 |
| Z    | S23    | 12-2-14.3        | QUEENNA BENNETT   | 3.093  |
|      | S24    | 05-25-16.1       | DAVID L CUNNINGHAM                                      | 6.34   |
|      | S25    | 05-25-16.2       | RODNEY J. LOY   | 1.087  |
| BB   | S26    | 05-26-12.1       | ALVIN F. JR. & KRISTA R. STONEKING                      | 2.011  |
| EE   | S27    | 05-25-17         | CRAIG & ASHLEY FERRELL                                  | 22.79  |
| DD   | S28    | 05-25-18         | JOSEPH JOHNSON, ETUX - LIFE                             | 37.746 |
| CC   | S29    | 05-26-11         | MARK A. YOHO  | 89.25  |
|      | S30    | 05-25-18.1       | PAMELA JOAN FERRELL, ET VIR                             | 2.491  |
|      | S31    | 05-25-19         | JOSEPH JOHNSON ET UX - LIFE                             | 1.973  |
| FF   | S32    | 05-26-8          | RICHARD J. OTTE   | 18.27  |
| GG   | S33    | 05-26-20         | RICHARD J. OTTE   | 4.2    |
|      | S34    | 05-23-11.5       | ZACHARY R. STEVEN                                       | 7      |
|      | S35    | 05-23-11.8       | ROY F. YOHO   | 2.25   |
|      | S36    | 05-23-11.3       | COLN R. YOHO  | 11.29  |
|      | S37    | 05-23-11.4       | EVELYN L. HUDSON  | 10.879 |
|      | S38    | 05-23-13.1       | JAMES R. & PAMELA J. FERRELL                            | 0.7625 |
| JJ   | S39    | 05-23-13         | LINDA D. GREATHOUSE                                     | 14.24  |
| II   | S40    | 05-23-12         | MARK A. YOHO  | 3.05   |
| HH   | S41    | 05-23-9.1        | JOHN W. VAN ORDEN, ETUX                                 | 23.376 |
|      | S42    | 05-23-9.4        | JACKSON R. DAVIS, JR.                                   | 2.087  |
| KK   | S43    | 05-23-9.2        | LINDA D. GREATHOUSE                                     | 25.58  |
|      | S44    | 05-23-8          | CARL DAVID & SUZANNE L. GUSEMAN                         | 29.5   |
|      | S45    | 05-23-9.3        | LINDA D. GREATHOUSE                                     | 17.5   |
|      | S46    | 05-23-11.6       | T.H. EXPLORATION II, LLC                                | 0.094  |
|      | S47    | 05-23-11.2       | EVELYN HUDSON   | 1.154  |
|      | S48    | 05-23-11         | ROY F. YOHO   | 7      |
|      | S49    | 05-25-20.3       | JAMES A. & JO C. ESTEP                                  | 4.49   |
|      | S50    | 05-25-20.2       | JAMES M. ZAMBOTTI                                       | 1.347  |
|      | S51    | 05-25-20.1       | JAMES M. ZAMBOTTI                                       | 2.746  |
|      | S54    | 05-25-1          | MICHAEL L. MASON  | 35.43  |
|      | S55    | 05-25-14         | ROY F. YOHO   | 23     |
|      | S56    | 05-25-13.2       | DAVID A. KLUG   | 5.89   |
|      | S57    | 05-25-13         | WILLIAM M. FERDA, JR., ETAL                             | 16.014 |
|      | S58    | 05-25-13.4       | PARSONS CEMETERY  | 0.382  |
|      | S59    | 05-25-12.1       | KENT & BETTY MASON                                      | 15     |
|      | S60    | 05-25-11.1       | EDWARD W. & DIANNA KLUG                                 | 2.343  |
|      | S61    | 12-3-44          | JAMES A. & JO C. ESTEP                                  | 1.1    |
|      | S62    | 12-3-47          | WETZEL CO. EMERGENCY AMBULANCE                          | 0.5    |
|      | S63    | 12-3-49          | LOGAN & AMY TAYLOR                                      | 3.814  |
|      | S64    | 12-3-43          | ADAM W. FERRELL & BRITTANY M. LOY                       | 1.97   |
|      | S65    | 05-25-16         | CRAIG R. & ASHLEY FERRELL                               | 23.5   |
|      | S66    | 12-3-1           | JAMES W. KLUG   | 0.375  |

\* FORCED POOLED TRACTS ARE HIGHLIGHTED



P.S. 708

*David L Jackson*

| Tags | Number | Tax Map - Parcel        | Surface Owner  | Acres  |
|------|--------|-------------------------|--|--------|
|      | S67    | 12-3-4.5                | HAZEL M. BLAIR   | 0.451  |
|      | S68    | 12-3-4.6                | STEVEN P. WAYMAN   | 1.009  |
|      | S69    | 12-3-4.8                | ERIN HUBBS   | 0.621  |
|      | S70    | 12-3-4.3                | JOSEPH P. & BARBARA A. CAHILL  | 3.619  |
|      | S71    | 12-3-2                  | ROBERT LEE & DIANA G. SMITH  | 2.48   |
|      | S72    | 12-3-3.1                | DIANA & ROBERT L SMITH   | 15.78  |
|      | S73    | 12-3-4.2                | DEREK L BAKER  | 5.21   |
|      | S74    | 12-3-3                  | ANITA LARELL SLOUGH  | 1.12   |
|      | S75    | 12-3-12                 | RODNEY DEAN JACKSON  | 3.625  |
|      | S76    | 12-3-48                 | RONALD W. & JULIE A. NICE  | 1      |
|      | S77    | 12-3-14                 | ROBERT W. BAXTER, FREDERICK J. BAXTER & ANN C. LINGER                              | 27     |
|      | S78    | 12-3-14.1               | MATTHEW D. HALL  | 13     |
|      | S79    | 12-3-13.1               | ZACHARY J. KIRKLAND  | 5      |
|      | S80    | 12-3-21.1               | LARRY J. & MARY ANN KIRKLAND   | 0.47   |
|      | S81    | 12-3-29                 | FRIEND V. ESTEP : RAYMOND F. ESTEP - L/E   | 2.9    |
|      | S82    | 12-3-30.4               | FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & JOAN ESTEP (RAYMOND ESTEP - L/E) | 81.82  |
|      | S83    | 12-3-30.2               | APRIL ROSE & DONALD ALLEN POSTLETHWAIT   | 1.67   |
|      | S84    | 12-3-30                 | MARY ROSE YOHO - L/E: APRIL ROSE POSTLETHWAIT                                      | 0.48   |
|      | S85    | 12-3-28                 | ANTIQUCH CHURCH  | 1      |
|      | S86    | 12-3-45                 | ANTIQUCH CHURCH  | 0.774  |
|      | S87    | 12-8-3                  | R. SHANE & KATHRYN GODDARD   | 31.13  |
|      | S88    | 12-3-30.3               | TIMOTHY L. SUMMERS   | 0.61   |
|      | S89    | 12-3-32                 | TIMOTHY L. SUMMERS   | 2.32   |
|      | S90    | 12-3-39                 | FRIEND V. ESTEP, MICHAEL & JOAN ESTEP & DOUGLAS & JOAN ESTEP (RAYMOND ESTEP - L/E) | 4.69   |
|      | S91    | 12-3-32.1               | TIMOTHY L. & LEA ANNSUMMERS  | 1.78   |
|      | S92    | 12-3-39.1               | WILLIAM NICE   | 1.31   |
|      | S93    | 12-3-31                 | DOUGLAS & SUZANNE ESTEP  | 3.25   |
|      | S94    | 12-8-4.3                | BRADY G. & SHARON L. HOWELL  | 5.59   |
|      | S95    | 12-8-4.1                | MARY JOSEPHINE & JACOB WOODROW NICE  | 6.171  |
|      | S96    | 12-8-13                 | EDWARD C. & SANDRA K MURRINER  | 1.5    |
|      | S97    | 12-8-14                 | EDWARD C. & SANDRA K MURRINER  | 5.33   |
|      | S98    | 12-8-16.1               | BRENT A. & KIMBERLY J. EDDY  | 0.06   |
|      | S99    | 12-8-4.4                | CHARLES & BETTY HUGGINS  | 0.69   |
|      | S100   | 12-8-4.2                | BRENT A. & KIMBERLY J. EDDY  | 1.861  |
|      | S101   | 12-8-4                  | JACOB WOODROW & MARY JOSEPHINE NICE  | 20.893 |
|      | S102   | 12-8-21                 | EDUARDO C. & SONYA R. DEGUZMAN   | 11.51  |
|      | S103   | 12-8-21.1               | LUNDA M. STOUT   | 15.26  |
|      | S104   | 12-8-22.1               | BARRY C. KIRKLAND  | 7.401  |
|      | S105   | 12-8-32.6               | CHARLES W. THOMAS JR.  | 1.309  |
|      | S106   | 12-8-32                 | CHARLES M. THOMAS, DAVID TODD & CINDY L. BATES                                     | 27.287 |
|      | S107   | 12-8-20.1               | PAUL J. BLAKE  | 1.5    |
|      | S108   | 12-8-20.9               | JOSHUA M. & COURTNEY R. NEFF   | 0.4    |
|      | S109   | 12-8-20.3               | PAUL J. BLAKE  | 0.25   |
|      | S110   | 12-8-20.8               | JOSHUA M. & COURTNEY R. NEFF   | 0.99   |
|      | S111   | 12-8-20.6               | JOHN G. & DEBRA D. THROCKMORTON  | 1.046  |
|      | S112   | 12-8-20.7               | RON JR. & SHANA CAMPBELL   | 5.44   |
|      | S113   | 12-8-18                 | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E                             | 6.4    |
|      | S114   | 12-7-33                 | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E                             | 5.75   |
|      | S115   | 12-7-32.1               | CHARLES D. ROSE JR., ETAL: CHARLES & JUDITH ROSE - L/E                             | 18     |
|      | S116   | 12-7-22.3               | TIMOTHY ROGER FERGUSON   | 0.239  |
|      | S117   | 12-7-22.2               | TIMOTHY ROGER FERGUSON   | 0.908  |
|      | S118   | 12-7-22.4               | WAYNE PAUL GODDARD   | 0.084  |
|      | S119   | 12-7-9                  | MICHAEL J. & ALENA R. FAYAD  | 22.526 |
|      | S120   | 12-7-9.1                | JAMES T. EDDY  | 17.47  |
|      | S121   | 12-7-22.1               | NANCY C. MURPHY - LE: KARI KIM CLARK   | 0.82   |
|      | S122   | 12-7-10                 | WAYNE PAUL GODDARD   | 1.5    |
|      | S123   | 12-2-22                 | MARY JOSEPHINE NICE  | 2.95   |
|      | S124   | 12-2-22.3               | DAVID L. & KIMBERLY L. NICE  | 1.65   |
|      | S125   | 12-2-20.2               | MICHAEL K. COZART  | 1.025  |
|      | S126   | 12-2-20.1               | SHIRLEY L. & KENNETH L. HAUGHT   | 1      |
|      | S127   | 12-2-20                 | MICHAEL K. & ROSETTA A. COZART   | 34.063 |
|      | S128   | 12-8-1.2                | JOSH GODDARD   | 1.81   |
|      | S129   | 12-7-8.1                | BRIAN & CHRISTINE L. NICE  | 7.628  |
|      | S130   | 12-7-8                  | MARK E. ELLER  | 1.012  |
|      | S131   | 12-7-7.5                | MARK E. ELLER  | 1.94   |
|      | S132   | 12-7-7.1                | MARK E. ELLER  | 1.41   |
|      | S133   | 12-2-25                 | MICHAEL K. & ROSETTA A. COZART   | 1.265  |
|      | S134   | 12-2-11.1               | BERYL E. MASON   | 1.7    |
|      | S135   | 12-2-9                  | LAURA RICHARDS COOK  | 77     |
|      | S136   | 12-2-10                 | LAURA RICHARDS COOK  | 95     |
|      | S137   | 12-2-5                  | CLIFFORD W. & ALBERTA B. JOHNSON   | 75.96  |
|      | S138   | 12-2-6                  | CLIFFORD W. & ALBERTA B. JOHNSON   | 36     |
|      | S139   | 12-3-46                 | CATHY A. PURPURA   | 0.514  |
|      | S140   | 05-26-13                | MARJORIE ANN STONEKING - LIFE  | 40     |
|      | S141   | 05-26-14                | THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OUIVER TRUST            | 27.56  |
|      | S142   | 05-26-10                | THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OUIVER TRUST            | 24.94  |
|      | S143   | 05-26-9                 | THERESA H. WALTON, AS TRUSTEE OF THE ROBERT D. & BONNIE L. OUIVER TRUST            | 21.75  |
|      | S144   | 05-26-21                | RICHARD JOSEPH OTTE  | 1.25   |
|      | S145   | 05-23-14                | DOMINION ENERGY TRANSMISSION, INC.   | 59.5   |
|      | S146   | 12-3-46                 | CATHY A. PURPURA   | 3.242  |
|      | S147   | 12-8-1.2                | JOSH GODDARD   | 1.81   |
|      | S148   | 05-23-11.8              | ROY F. YOHO  | 2.25   |
|      | S149   | p/o 12-3-39 & 12-3-30.4 | DOUGLAS & SUZANNE ESTEP  | 0.145  |
|      | S150   | p/o 12-3-4.7 & 12-3-4.3 | JOSHUA D. LEMASTERS & ERIN LEMASTERS   | 3.602  |

10/21/2022



**TUG HILL  
OPERATING**

OPERATOR'S  
WELL #: ELMER N-14HU  
DISTRICT: Proctor  
COUNTY: Wetzel  
STATE: WV  
API #: 47-103-03502

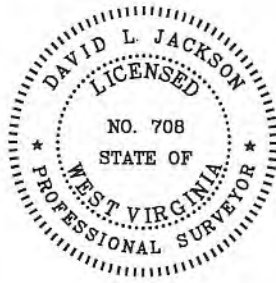
**WELL PLAT**  
**PAGE 3 OF 4**  
**DATE: 7/26/2022**

form wv6

**ELMER LEASE  
WELL N-14HU  
472.7041± ACRES**

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| Lease ID | TMP       | Tag | Grantor, Lessor, Etc.                      | Deed Book/Page |     |
|----------|-----------|-----|--|----------------|-----|
| 10*31435 | 12-8-15   | A   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-8-2    | B   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-8-1    | C   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31436 | 12-7-32   | D   | J R HUGGINS                                | 56             | 465 |
| 10*21035 | 12-7-22   | E   | THOMAS E GARNER AND BILLIE J GARNER, ET AL | 200A           | 385 |
| 10*31435 | 12-8-1.1  | F   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-7-13.1 | G   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-7-11   | H   | HENRY AND NANCY GARNER                     | 55             | 394 |
| **FORCE  |           |     |  |                |     |
| POOL**   | 12-2-22.2 | I   | THOMAS E GARNER                            | 255A           | 816 |
| 10*31435 | 12-7-12   | J   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-3-26.1 | K   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-2-23.1 | L   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-2-23.3 | M   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*31435 | 12-2-23.4 | N   | HENRY AND NANCY GARNER                     | 55             | 394 |
| 10*21035 | 12-2-23   | O   | THOMAS E GARNER AND BILLIE J GARNER, ET AL | 200A           | 385 |
| **FORCE  |           |     |  |                |     |
| POOL**   | 12-2-22.1 | P   | THOMAS E GARNER, ET AL                     | 166A           | 436 |
| 10*22571 | 12-2-21   | Q   | LINDA M YOHO, ET AL                        | 209A           | 281 |
| 10*22571 | 12-2-18   | R   | LINDA M YOHO, ET AL                        | 209A           | 281 |
| 10*21681 | 12-2-19   | S   | DOROTHY J HAAS, ET AL                      | 214A           | 358 |
| 10*18336 | 12-2-12   | T   | ED BROOME INC, ET AL                       | 198A           | 718 |
| **FORCE  |           |     |  |                |     |
| POOL**   | 12-2-13   | U   | DANIEL T BOOTH, ET AL                      | N/A            | N/A |
| 10*39463 | 12-3-4.7  | V   | J P COOPER ET AL                           | 56             | 245 |
| 10*18205 | 12-2-14.2 | W   | MELISSA PAINTER AND SHAUN PAINTER, ET AL   | 927            | 639 |
| 10*27897 | 12-2-14.1 | X   | CAROL VASS, ET AL                          | 232A           | 346 |
| 10*18205 | 5-25-15   | Y   | MELISSA PAINTER AND SHAUN PAINTER, ET AL   | 927            | 639 |
| 10*39461 | 12-2-14.3 | Z   | JAMES M PARSONS                            | 73             | 195 |
| 10*31441 | 5-26-12   | AA  | JASON AND S M PARSONS                      | 59             | 3   |
| 10*31441 | 5-26-12.1 | BB  | JASON AND S M PARSONS                      | 59             | 3   |
| 10*14786 | 5-26-11   | CC  | TWILA O WHIPKEY, ET AL                     | 799            | 61  |
| 10*14786 | 5-25-18   | DD  | TWILA O WHIPKEY, ET AL                     | 799            | 61  |
| 10*14786 | 5-25-17   | EE  | TWILA O WHIPKEY, ET AL                     | 799            | 61  |
| 10*14722 | 5-26-8    | FF  | HERBERT D MINOR, ET AL                     | 724            | 200 |
| 10*14722 | 5-26-20   | GG  | HERBERT D MINOR, ET AL                     | 724            | 200 |
| 10*17189 | 5-23-9.1  | HH  | ROBERT J HENRY                             | 716            | 197 |
| 10*14969 | 5-23-12   | II  | REBECCA S WORD, ET AL                      | 872            | 219 |
| 10*14786 | 5-23-13   | JJ  | TWILA O WHIPKEY, ET AL                     | 799            | 61  |
| 10*17189 | 5-23-9.2  | KK  | ROBERT J HENRY                             | 716            | 197 |



P.S. 708 *David L Jackson*

10/21/2022



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OPERATING**

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WELL #: ELMER N-14HU  
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WELL PLAT  
**PAGE 4 OF 4**  
DATE: 7/26/2022



Stansberry, Wade A <wade.a.stansberry@wv.gov>

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## Deep Modification Horizontal H6A Well Work Permit API : (47-103-03502)

1 message

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**Stansberry, Wade A** <wade.a.stansberry@wv.gov>

Thu, Oct 20, 2022 at 11:11 AM

To: Amy Morris <amorris@tug-hilop.com>, Scott Lemley <slemley@wvassessor.com>, "Greynolds, Kenneth L" <kenneth.l.greynolds@wv.gov>

I have attached a copy of the newly issued well [permit](#) numbers:

**47-103-03502 - ELMER N-14HU**

These will serve as your copy.

Thank you,

**Wade A. Stansberry**

**Environmental Resource Specialist 3**

**West Virginia Department of Environmental Protection**

**Office of Oil & Gas**

**601 57th St. SE**


**Charleston, WV 25304**

**(304) 926-0499 ext. 41115**

**(304) 926-0452 fax**

**[Wade.A.Stansberry@wv.gov](mailto:Wade.A.Stansberry@wv.gov)**

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 **47-103-03502 - mod.pdf**  
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10/21/2022