

State of West Virginia  
Department of Environmental Protection - Office of Oil and Gas  
Well Operator's Report of Well Work

API 47-069-00180 County OHIO District LIBERTY  
Quad VALLEY GROVE Pad Name ALICE EDGE-OHI-PAD1 Field/Pool Name PANDHANDLE FIELD  
Farm name ALICE MAE EDGE Well Number ALICE EDGE OHI 3H  
Operator (as registered with the OOG) SWN PRODUCTION COMPANY LLC  
Address PO BOX 12359 City SPRING State TX Zip 77397-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey  
Top hole Northing 4438947.520 Easting 537467.805  
Landing Point of Curve Northing 4439089.837 Easting 537403.955  
Bottom Hole Northing 4441755.916 Easting 536186.648

Elevation (ft) 1199' GL Type of Well  New  Existing Type of Report  Interim  Final  
Permit Type  Deviated  Horizontal  Horizontal 6A  Vertical Depth Type  Deep  Shallow  
Type of Operation  Convert  Deepen  Drill  Plug Back  Redrilling  Rework  Stimulate  
Well Type  Brine Disposal  CBM  Gas  Oil  Secondary Recovery  Solution Mining  Storage  Other \_\_\_\_\_  
Type of Completion  Single  Multiple Fluids Produced  Brine  Gas  NGL  Oil  Other \_\_\_\_\_  
Drilled with  Cable  Rotary

Drilling Media Surface hole  Air  Mud  Fresh Water Intermediate hole  Air  Mud  Fresh Water  Brine  
Production hole  Air  Mud  Fresh Water  Brine  
Mud Type(s) and Additive(s)  
SOBM

Date permit issued 09/23/2014 Date drilling commenced 10/02/2014 Date drilling ceased 12/19/2014  
Date completion activities began 09/21/2015 Date completion activities ceased 11/10/2015  
Verbal plugging (Y/N) N Date permission granted N/A Granted by Office of Oil and Gas

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 394' Open mine(s) (Y/N) depths N  
Salt water depth(s) ft 731' Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 588' Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:  
[Signature] **03/04/2016**  
2-22-16

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API 47-069 - 00180 Farm name ALICE MAE EDGE Well number ALICE EDGE OHI 3H

| CASING STRINGS            | Hole Size    | Casing Size | Depth  | New or Used | Grade wt/ft  | Basket Depth(s) | Did cement circulate (Y/N)<br>* Provide details below* |
|---------------------------|--------------|-------------|--------|-------------|--------------|-----------------|--|
| Conductor                 | 26           | 20          | 120'   | N           | J-55/ 94#    |                 | Y  |
| Surface                   | 17.5         | 13.375      | 619'   | N           | J-55/ 54.50# |                 | Y, 34 BBLS TO SURFACE                                  |
| Coal                      | SEE SURFACE  |             |        |             |              |                 |  |
| Intermediate 1            | 12.25        | 9.625       | 2092'  | N           | J-55/ 40#    |                 | Y, 35 BBLS TO SURFACE                                  |
| Intermediate 2            |              |             |        |             |              |                 |  |
| Intermediate 3            |              |             |        |             |              |                 |  |
| Production                | 8.75 TO 8.50 | 5.5         | 16440' | N           | P-110/20#    |                 | Y, 20 BBLS TO SURFACE                                  |
| Tubing                    |              | 2.375       | 6721'  | N           | P-110/4.70#  |                 | N  |
| Packer type and depth set |              | N/A         |        |             |              |                 |  |

Comment Details \_\_\_\_\_

| CEMENT DATA    | Class/Type of Cement | Number of Sacks | Slurry wt (ppg) | Yield (ft <sup>3</sup> /sks) | Volume (ft <sup>3</sup> ) | Cement Top (MD) | WOC (hrs) |
|----------------|----------------------|-----------------|-----------------|------------------------------|---------------------------|-----------------|-----------|
| Conductor      | A                    | GROUT           | 19.3            | 1.20                         |                           | SURFACE         | 24        |
| Surface        | A                    | 590             | 15.6            | 1.20                         | 708                       | SURFACE         | 8         |
| Coal           | SEE SURFACE          |                 |                 |                              |                           |                 |           |
| Intermediate 1 | A                    | 822             | 15.6            | 1.19                         | 978.18                    | SURFACE         | 8         |
| Intermediate 2 |                      |                 |                 |                              |                           |                 |           |
| Intermediate 3 |                      |                 |                 |                              |                           |                 |           |
| Production     | A                    | 905/2400        | 15.3/15.6       | 1.31/1.19                    | 11858.55/2855             | SURFACE         | 24        |
| Tubing         |                      |                 |                 |                              |                           |                 |           |

Drillers TD (ft) 16440' Loggers TD (ft) 16440'  
 Deepest formation penetrated MARCELLUS Plug back to (ft) NA  
 Plug back procedure NA

Kick off depth (ft) 5720'

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Check all wireline logs run  caliper  density  deviated/directional  induction  
 neutron  resistivity  gamma ray  temperature

Well cored  Yes  No Conventional Sidewall Were cuttings collected  Yes  No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING \_\_\_\_\_ WV Department of Environmental Protection

ALL CASING STRINGS RAN WITH A CENTRALIZER AT A MINIMUM OF 1 PER EVERY 3RD JOINT OF CASING

WAS WELL COMPLETED AS SHOT HOLE  Yes  No DETAILS \_\_\_\_\_

WAS WELL COMPLETED OPEN HOLE?  Yes  No DETAILS \_\_\_\_\_

WERE TRACERS USED  Yes  No TYPE OF TRACER(S) USED \_\_\_\_\_



API 47- 069 - 00180 Farm name ALICE MAE EDGE Well number ALICE EDGE OHI 3H

| <u>PRODUCING FORMATION(S)</u> | <u>DEPTHS</u>   |            |                           |
|-------------------------------|-----------------|------------|---------------------------|
| <u>MARCELLUS</u>              | <u>6390.72'</u> | <u>TVD</u> | <u>6612.09'</u> <u>MD</u> |
| _____                         | _____           | _____      | _____                     |
| _____                         | _____           | _____      | _____                     |

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump  
 SHUT-IN PRESSURE Surface \_\_\_\_\_ psi Bottom Hole \_\_\_\_\_ psi DURATION OF TEST NO TEST PERFORM \_\_\_\_\_ hrs

OPEN FLOW Gas 4491 mcfpd Oil 359 bpd NGL \_\_\_\_\_ bpd Water 456 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

| LITHOLOGY/<br>FORMATION | TOP                     | BOTTOM              | TOP               | BOTTOM            | DESCRIBE ROCK TYPE AND RECORD QUANTITY AND<br>TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC) |
|-------------------------|-------------------------|---------------------|-------------------|-------------------|--|
|                         | DEPTH IN FT<br>NAME TVD | DEPTH IN FT<br>TVD  | DEPTH IN FT<br>MD | DEPTH IN FT<br>MD |  |
|                         | <u>0</u>                |                     | <u>0</u>          |                   |  |
|                         |                         | <u>SEE ATTACHED</u> |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |
|                         |                         |                     |                   |                   |  |

Please insert additional pages as applicable.

Drilling Contractor NOMAC  
 Address 3400 SOUTH RADIO ROAD City EL RENO State OK Zip 73036

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Logging Company NINE ENERGY SERVICES  
 Address 16945 NORTHCHASE DR, STE 1600 City HOUSTON State TX Zip 77060

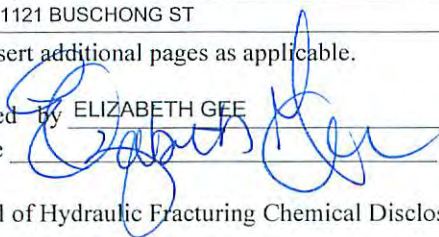
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Cementing Company SCHLUMBERGER  
 Address 110 SCHLUMBERGER DRIVE City SUGAR LAND State TX Zip 77478

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Stimulating Company DOWELL SCHLUMBERGER  
 Address 1121 BUSCHONG ST City HOUSTON State TX Zip 77039

Please insert additional pages as applicable.

Completed By ELIZABETH GEE Telephone 832-796-7632  
 Signature  Title SR. REGULATORY ANALYST Date 01/26/2016

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

**ALICE EDGE OHI 3 - PERFORATION RECORD**

| STAGE NUM | Perf Date | Perf Top MD | Perf Bottom MD | # SHOTS PER STG |
|-----------|-----------|-------------|----------------|-----------------|
| 1         | 9/21/2015 | 16,098      | 16,295         | 42              |
| 2         | 9/22/2015 | 15,839      | 16,035         | 42              |
| 3         | 9/22/2015 | 15,579      | 15,776         | 42              |
| 4         | 9/22/2015 | 15,319      | 15,516         | 42              |
| 5         | 9/23/2015 | 15,060      | 15,256         | 42              |
| 6         | 9/23/2015 | 14,800      | 14,997         | 42              |
| 7         | 9/23/2015 | 14,540      | 14,737         | 42              |
| 8         | 9/23/2015 | 14,284      | 14,477         | 42              |
| 9         | 9/24/2015 | 14,021      | 14,215         | 42              |
| 10        | 9/24/2015 | 13,761      | 13,955         | 42              |
| 11        | 9/24/2015 | 13,502      | 13,694         | 42              |
| 12        | 9/25/2015 | 13,242      | 13,434         | 42              |
| 13        | 9/25/2015 | 12,982      | 13,179         | 42              |
| 14        | 9/25/2015 | 12,722      | 12,924         | 42              |
| 15        | 9/26/2015 | 12,463      | 12,662         | 42              |
| 16        | 9/26/2015 | 12,203      | 12,400         | 42              |
| 17        | 9/26/2015 | 11,943      | 12,140         | 42              |
| 18        | 9/26/2015 | 11,684      | 11,881         | 42              |
| 19        | 9/27/2015 | 11,424      | 11,621         | 42              |
| 20        | 9/27/2015 | 11,164      | 11,361         | 42              |
| 21        | 9/27/2015 | 10,905      | 11,102         | 42              |
| 22        | 9/28/2015 | 10,645      | 10,842         | 42              |
| 23        | 9/28/2015 | 10,385      | 10,582         | 42              |
| 24        | 9/28/2015 | 10,126      | 10,323         | 42              |
| 25        | 9/28/2015 | 9,871       | 10,063         | 42              |
| 26        | 9/29/2015 | 9,611       | 9,803          | 42              |
| 27        | 9/29/2015 | 9,347       | 9,543          | 42              |
| 28        | 9/29/2015 | 9,088       | 9,284          | 42              |
| 29        | 9/30/2015 | 8,827       | 9,024          | 42              |
| 30        | 9/30/2015 | 8,568       | 8,764          | 42              |
| 31        | 9/30/2015 | 8,308       | 8,505          | 42              |
| 32        | 9/30/2015 | 8,051       | 8,245          | 42              |
| 33        | 10/1/2015 | 7,791       | 7,985          | 42              |
| 34        | 10/1/2015 | 7,529       | 7,726          | 42              |
| 35        | 10/1/2015 | 7,269       | 7,466          | 42              |
| 36        | 10/1/2015 | 7,010       | 7,206          | 42              |
| 37        | 10/2/2015 | 6,750       | 6,947          | 42              |

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**ALICE EDGE OHI 3 - STIMULATION INFORMATION**

| STAGE NUM   | Stim Date | Ave Pump Rate (BPM) | Ave Treatment Pressure (PSI) | Max Breakdown Pressure (PSI) | ISIP (PSI) | Amount of Proppant (lbs) | Amount of water bbls | Amount of nitrogen/ other |
|-------------|-----------|---------------------|------------------------------|------------------------------|------------|--------------------------|----------------------|---------------------------|
| 1           | 9/21/2015 | 2                   | 8,050                        | 9,095                        | 4,514      | 275,400                  | 5,106                |                           |
| 2           | 9/22/2015 | 2                   | 8,409                        | 9,241                        | 4,739      | 500,880                  | 7,826                |                           |
| 3           | 9/22/2015 | 2                   | 8,686                        | 9,052                        | 4,666      | 498,840                  | 7,588                |                           |
| 4           | 9/22/2015 | 2                   | 8,535                        | 9,108                        | 4,684      | 499,160                  | 7,662                |                           |
| 5           | 9/23/2015 | 2                   | 8,272                        | 9,158                        | 4,598      | 502,340                  | 7,687                |                           |
| 6           | 9/23/2015 | 2                   | 7,849                        | 9,096                        | 4,319      | 500,560                  | 7,925                |                           |
| 7           | 9/23/2015 | 2                   | 7,968                        | 8,628                        | 4,339      | 502,640                  | 7,663                |                           |
| 8           | 9/23/2015 | 2                   | 7,850                        | 9,145                        | 4,839      | 500,900                  | 7,459                |                           |
| 9           | 9/24/2015 | 2                   | 7,843                        | 9,100                        | 4,591      | 500,540                  | 7,590                |                           |
| 10          | 9/24/2015 | 2                   | 7,856                        | 8,815                        | 4,601      | 500,720                  | 7,610                |                           |
| 11          | 9/24/2015 | 2                   | 8,405                        | 8,999                        | 4,630      | 497,400                  | 7,410                |                           |
| 12          | 9/25/2015 | 2                   | 7,348                        | 8,494                        | 4,404      | 499,920                  | 8,025                |                           |
| 13          | 9/25/2015 | 2                   | 7,849                        | 9,122                        | 4,617      | 500,460                  | 7,708                |                           |
| 14          | 9/25/2015 | 2                   | 8,127                        | 9,283                        | 4,517      | 500,200                  | 7,399                |                           |
| 15          | 9/26/2015 | 2                   | 8,172                        | 9,194                        | 4,506      | 500,380                  | 7,468                |                           |
| 16          | 9/26/2015 | 2                   | 8,018                        | 8,955                        | 4,442      | 500,800                  | 7,517                |                           |
| 17          | 9/26/2015 | 2                   | 8,106                        | 9,008                        | 4,657      | 500,420                  | 7,701                |                           |
| 18          | 9/26/2015 | 2                   | 8,150                        | 9,289                        | 4,443      | 487,220                  | 7,362                |                           |
| 19          | 9/27/2015 | 2                   | 8,242                        | 9,217                        | 4,594      | 500,320                  | 7,409                |                           |
| 20          | 9/27/2015 | 2                   | 7,577                        | 8,848                        | 4,546      | 500,400                  | 7,674                |                           |
| 21          | 9/27/2015 | 2                   | 7,671                        | 8,997                        | 4,563      | 497,740                  | 7,212                |                           |
| 22          | 9/28/2015 | 2                   | 7,640                        | 8,816                        | 4,743      | 500,480                  | 7,182                |                           |
| 23          | 9/28/2015 | 2                   | 7,456                        | 8,921                        | 4,972      | 499,760                  | 7,420                |                           |
| 24          | 9/28/2015 | 2                   | 7,582                        | 8,925                        | 4,529      | 500,000                  | 7,413                |                           |
| 25          | 9/28/2015 | 2                   | 7,762                        | 8,861                        | 4,738      | 499,400                  | 7,490                |                           |
| 26          | 9/29/2015 | 2                   | 7,525                        | 9,126                        | 4,545      | 495,460                  | 7,456                |                           |
| 27          | 9/29/2015 | 2                   | 7,503                        | 8,902                        | 4,566      | 500,940                  | 7,355                |                           |
| 28          | 9/29/2015 | 2                   | 7,735                        | 9,276                        | 4,710      | 500,760                  | 7,550                |                           |
| 29          | 9/30/2015 | 2                   | 7,419                        | 8,519                        | 4,615      | 500,760                  | 7,574                |                           |
| 30          | 9/30/2015 | 2                   | 7,211                        | 8,853                        | 4,601      | 499,900                  | 7,236                |                           |
| 31          | 9/30/2015 | 2                   | 7,282                        | 8,922                        | 4,637      | 500,680                  | 7,151                |                           |
| 32          | 9/30/2015 | 2                   | 7,163                        | 8,810                        | 4,471      | 498,420                  | 7,275                |                           |
| 33          | 10/1/2015 | 2                   | 7,248                        | 8,753                        | 4,577      | 501,760                  | 7,313                |                           |
| 34          | 10/1/2015 | 2                   | 7,174                        | 8,925                        | 4,714      | 500,440                  | 7,105                |                           |
| 35          | 10/1/2015 | 2                   | 7,150                        | 7,688                        | 4,578      | 500,980                  | 7,334                |                           |
| 36          | 10/1/2015 | 2                   | 6,957                        | 9,084                        | 4,936      | 503,100                  | 7,411                |                           |
| 37          | 10/2/2015 | 2                   | 7,435                        | 8,222                        | 4,815      | 501,020                  | 7,698                |                           |
| Grand total |           | 2                   | 7,763                        | 9,289                        | 4,610      | 18,271,100               | 275,059              |                           |

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**ALICE EDGE OHI 3H**

| LITHOLOGY/FORMATION | TOP DEPTH, TVD (FT) | BOTTOM DEPTH, TVD (FT) | TOP DEPTH, MD (FT) | BOTTOM DEPTH, MD (FT) | QUANTITY AND TYPE OF FLUID |
|---------------------|---------------------|------------------------|--------------------|-----------------------|----------------------------|
| Base of Fresh Water | N.A.                | 394.00                 | N.A.               | 394.00                |                            |
| Top of Salt Water   | 731.00              | N.A.                   | 731.00             | N.A.                  |                            |
| Pittsburgh Coal     | 582.00              | 588.00                 | 582.00             | 588.00                |                            |
| Big Injun (ss)      | 1820.24             | 2276.69                | 1829.00            | 2289.00               |                            |
| Berea (siltstone)   | 2276.69             | 5775.98                | 2289.00            | 5789.00               |                            |
| Rhinestreet (shale) | 5775.98             | 6053.88                | 5789.00            | 6079.57               |                            |
| Cashaqua (shale)    | 6053.88             | 6126.46                | 6079.57            | 6161.80               |                            |
| Middlesex (shale)   | 6126.46             | 6199.03                | 6161.80            | 6251.80               |                            |
| Burket (shale)      | 6199.03             | 6227.11                | 6251.80            | 6290.23               |                            |
| Tully (ls)          | 6227.11             | 6261.91                | 6290.23            | 6342.45               |                            |
| Mahantango (shale)  | 6261.91             | 6390.72                | 6342.45            | 6612.09               |                            |
| Marcellus (shale)   | 6390.72             | N.A.                   | 6612.09            | N.A.                  |                            |

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# Hydraulic Fracturing Fluid Product Component Information Disclosure

|                                |                     |
|--------------------------------|---------------------|
| Job Start Date:                | 9/21/2015           |
| Job End Date:                  | 10/2/2015           |
| State:                         | West Virginia       |
| County:                        | Ohio                |
| API Number:                    | 47-069-00180-00-00  |
| Operator Name:                 | Southwestern Energy |
| Well Name and Number:          | ALICE EDGE OHI 3H   |
| Longitude:                     | -80.56041871        |
| Latitude:                      | 40.09998741         |
| Datum:                         | NAD83               |
| Federal/Tribal Well:           | NO                  |
| True Vertical Depth:           | 6,268               |
| Total Base Water Volume (gal): | 11,552,478          |
| Total Base Non Water Volume:   | 0                   |



## Hydraulic Fracturing Fluid Composition:

| Trade Name   | Supplier     | Purpose  | Ingredients  | Chemical Abstract Service Number (CAS #) | Maximum Ingredient Concentration in Additive (% by mass)** | Maximum Ingredient Concentration in HF Fluid (% by mass)** | Comments |
|--|--------------|--|--|--|--|--|----------|
| Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS. |              |  |  |  |  |  |          |
| Proppant Transport   | Schlumberger | Corrosion Inhibitor, Acid Corrosion Inhibitor, Acid, Friction Reducer, Fluid Loss Additive |  |  |  |  |          |
|  |              |  | Water (Including Mix Water Supplied by Client)*                                      | NA                                       |  | 83.83172   |          |
|  |              |  | Quartz, Crystalline silica   | 14808-60-7                               | 98.38644   | 15.90739   |          |
|  |              |  | Hydrochloric acid  | 7647-01-0                                | 1.27613  | 0.20633  |          |
|  |              |  | Ammonium sulfate   | 7783-20-2                                | 0.17544  | 0.02837  |          |
|  |              |  | Acrylamide, 2-acrylamido-2-methylpropanesulfonic acid, sodium salt polymer           | 38193-60-1                               | 0.12949  | 0.02094  |          |
|  |              |  | Polymer of 2-acrylamido-2-methylpropanesulfonic acid sodium salt and methyl acrylate | 136793-29-8                              | 0.01388  | 0.00224  |          |
|  |              |  | Urea   | 57-13-6                                  | 0.00852  | 0.00138  |          |
|  |              |  | Propan-2-ol  | 67-63-0                                  | 0.00209  | 0.00034  |          |
|  |              |  | Sodium sulfate   | 7757-82-6                                | 0.00199  | 0.00032  |          |
|  |              |  | Silicon Dioxide  | 7631-86-9                                | 0.00177  | 0.00029  |          |
|  |              |  | Fatty acid, tall-oil reaction products with acetophenone                             | 68188-40-9                               | 0.00081  | 0.00013  |          |
|  |              |  | Alcohols, C12-C16, ethoxylated   | 68551-12-2                               | 0.00068  | 0.00011  |          |



|  |  |  |            |         |         |
|--|--|--|------------|---------|---------|
|  |  | 2-Propenamid (impurity)  | 79-06-1    | 0.00042 | 0.00007 |
|  |  | Isodecanol w/6-7 Moles Ethylene Oxide                            | 26183-52-8 | 0.00046 | 0.00007 |
|  |  | Cinnamaldehyde   | 104-55-2   | 0.00030 | 0.00005 |
|  |  | Methanol   | 67-56-1    | 0.00026 | 0.00004 |
|  |  | Tetrasodium ethylenediaminetetraacetate                          | 64-02-8    | 0.00022 | 0.00004 |
|  |  | Fatty acids, tall-oil  | 61790-12-3 | 0.00018 | 0.00003 |
|  |  | Thiourea, polymer with formaldehyde and 1-phenylethanone         | 68527-49-1 | 0.00015 | 0.00002 |
|  |  | Dimethyl siloxanes and silicones                                 | 63148-62-9 | 0.00012 | 0.00002 |
|  |  | Alcohols, C14-15, ethoxylated (7EO)                              | 68951-67-7 | 0.00007 | 0.00001 |
|  |  | Dodecyl poly(oxyethylene) ether                                  | 9002-92-0  | 0.00004 | 0.00001 |
|  |  | Amines, tallow alkyl, ethoxylated                                | 61791-26-2 | 0.00009 | 0.00001 |
|  |  | Propargyl alcohol  | 107-19-7   | 0.00005 | 0.00001 |
|  |  | Decamethyl cyclopentasiloxane                                    | 541-02-6   | 0.00001 |         |
|  |  | Dodecamethylcyclohexasiloxane                                    | 540-97-6   | 0.00001 |         |
|  |  | Hexadec-1-ene  | 629-73-2   | 0.00002 |         |
|  |  | Glycols, polyethylene, monotetradecyl ether                      | 27306-79-2 | 0.00003 |         |
|  |  | Formaldehyde   | 50-00-0    |         |         |
|  |  | Octamethylcyclotetrasiloxane                                     | 556-67-2   | 0.00001 |         |
|  |  | Copper(II) sulfate   | 7758-98-7  | 0.00001 |         |
|  |  | Siloxanes and silicones, dimethyl, reaction products with silica | 67762-90-7 | 0.00002 |         |
|  |  | 1-Octadecene (C18)   | 112-88-9   | 0.00001 |         |

\* Total Water Volume sources may include fresh water, produced water, and/or recycled water

\*\* Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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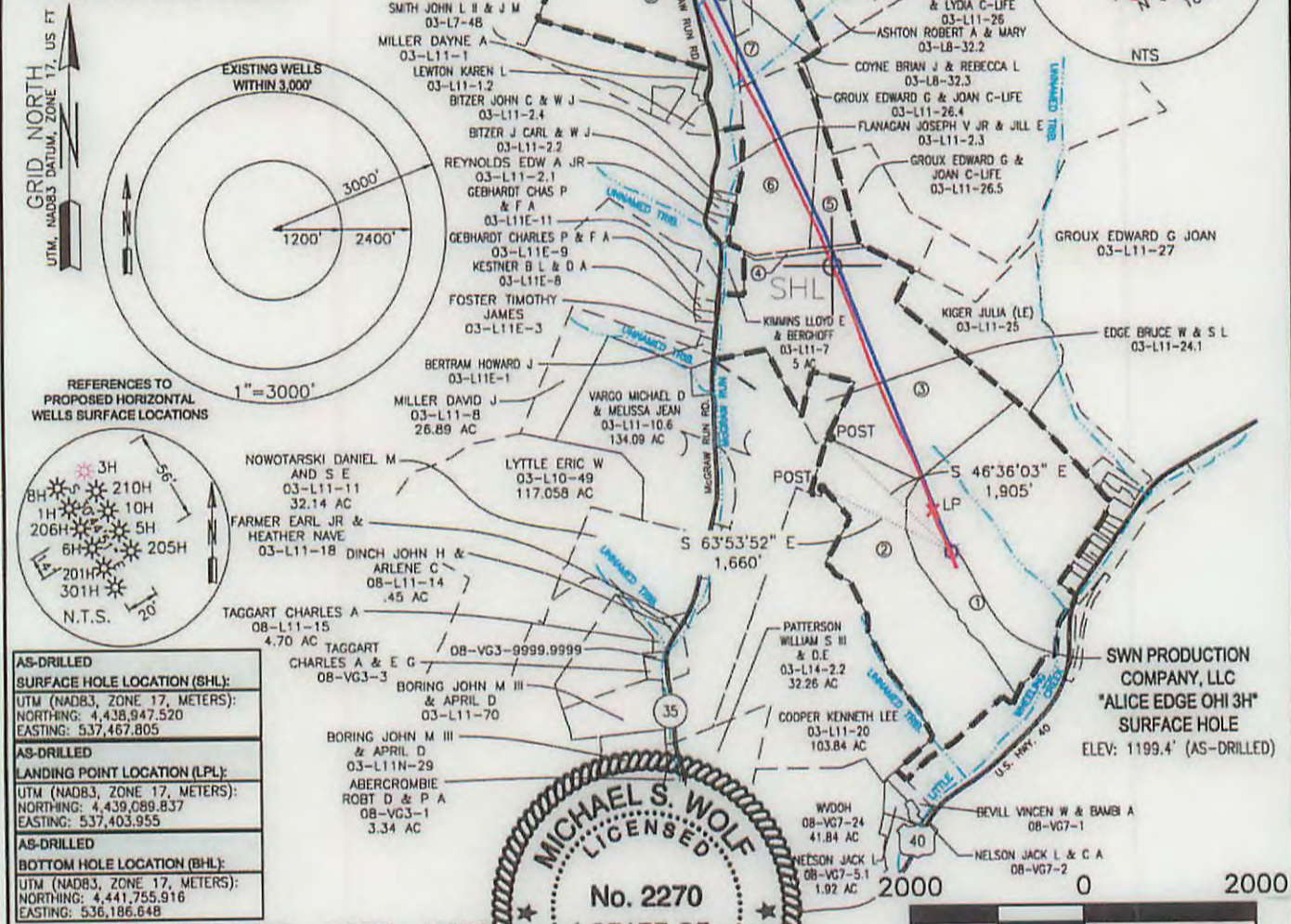
# THRASHER AS-DRILLED

THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-624-4108

**NOTES ON SURVEY**

- COORDINATES SYSTEM IS UTM, NAD 83 DATUM, ZONE 17, U.S. FOOT AND WELL COORDINATES ESTABLISHED USING SURVEY GRADE GPS.
- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- NO DWELLINGS AND BUILDINGS WITHIN 625 FEET OF PROPOSED CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, RESERVOIRS OR WETLANDS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.

| TRACT | SURFACE OWNER (S) / ROYALTY OWNER (R) | TAX PARCEL | ACRES  | LEASE NO.     |
|-------|---------------------------------------|------------|--------|---------------|
| 1     | ALICE MAE EDGE                        | 3-L11-23   | 103.0  | 1-292590-000  |
| 2     | LYNN & YVONNE REUSSER                 | 3-L11-21   | 70.90  | 47-000578-000 |
| 3     | ALICE MAE EDGE                        | 3-L11-24   | 112.94 | 1-292590-000  |
| 4     | J & F CHAMBERS HOLDINGS, LLC          | 3-L11-26.3 | 0.69   | 47-000606-000 |
| 5     | EDWARD G GROUX JR                     | 3-L11-26.4 | 11.38  | 47-000606-000 |
| 6     | EDWARD G GROUX JR                     | 3-L11-26.1 | 40.00  | 47-000606-000 |
| 7     | RICHARD L & R.L. ASTON                | 3-LB-32.1  | 20.14  | 1-384429-000  |
| 8     | PAUL E & CAROLE L PITTMAN             | 3-LB-31    | 14.46  | 1-385507-000  |
| 9     | STEVE & SHARON K VARGO                | 3-LB-29    | 56.50  | 1-384424-000  |
| 10    | DONALD J & S.M. GAUS                  | 3-LB-30    | 5.00   | 1-385506-000  |
| 11    | DONALD J & S.M. GAUS                  | 3-LB-30.5  | 0.474  | 1-385506-000  |
| 12    | TUNNEL RIDGE LLC                      | 3-LB-19    | 6.00   | 1-324196-000  |
| 13    | JEFF & JOLENE M EISENHAUER            | 3-LB-20    | 3.66   | 1-385485-000  |
| 14    | ALBERT T & BEATRICE V DAGUE           | 3-LB-21    | 6.59   | 1-385505-000  |
| 15    | JAY T & MELISSA J MAUCK               | 3-LB-22    | 5.86   | 1-329212-000  |
| 16    | DANIEL MCKEE                          | 3-LB-23    | 4.11   | 1-329244-000  |



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 REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

P.S. 2270 *M.S. Wolf 1/25/16*

COMPANY: **SWN** Production Company, LLC

ALICE EDGE OHI 3H

OPERATOR'S WELL #: OHI 3H

API WELL #: **47 069 00180**

STATE COUNTY PERMIT

|   |  |   |
|---|--|---|
| <p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP<br/>OFFICE OF OIL &amp; GAS<br/>601 57TH STREET<br/>CHARLESTON, WV 25034</p> | MINIMUM DEGREE OF ACCURACY: 1/200<br>PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT) | ALICE EDGE<br>OHI 3H<br>47 069 00180<br>STATE COUNTY PERMIT |
|---|--|---|

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

WATERSHED: UPPER OHIO SOUTH ELEVATION: 1199.4

DISTRICT: LIBERTY COUNTY: OHIO QUADRANGLE: VALLEY GROVE

SURFACE OWNER: ALICE MAE EDGE ACREAGE: 103±

OIL & GAS ROYALTY OWNER: ALICE MAE EDGE ACREAGE: 529.229±

DRILL  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION

CONVERT  PLUG & ABANDON  CLEAN OUT & REPLUG  OTHER CHANGE (SPECIFY)

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 6,410 TVD 16,302 TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: DEE SOUTHALL

ADDRESS: P.O. BOX 1300 ADDRESS: P.O. BOX 1300

CITY: JANE LEW STATE: WV ZIP CODE: 26378 CITY: JANE LEW STATE: WV ZIP CODE: 26378

|   |   |  |
|---|---|--|
| <b>LEGEND:</b><br>○ PROPOSED SURFACE HOLE / BOTTOM HOLE<br>* EXISTING / PRODUCING WELLHEAD<br>✕ ABANDONED WELL<br>✕ PLUGGED & ABANDONED WELL<br>△ CUT CONDUCTOR | <b>REVISIONS:</b><br>--- LEASE BOUNDARY<br>--- DESIGN DHP<br>--- AS-DRILLED DHP<br>--- ABANDONED PATH | DATE: 01-25-2016<br>DRAWN BY: KJP<br>SCALE: 1" = 2000'<br>DRAWING NO: 030-2725<br>WELL LOCATION PLAT |
|---|---|--|

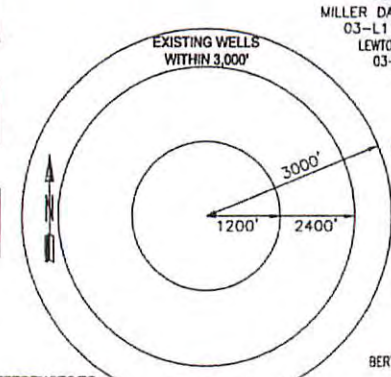
# THRASHER AS-DRILLED

THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-624-4108

### NOTES ON SURVEY

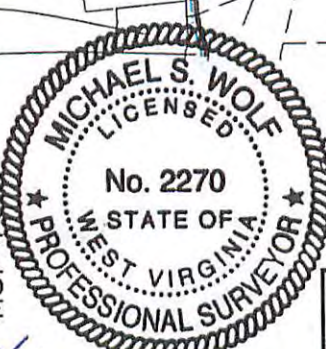
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| TRACT | SURFACE OWNER (S) / ROYALTY OWNER (R) | TAX PARCEL  | ACRES  | LEASE NO.     |
|-------|---------------------------------------|-------------|--------|---------------|
| 1     | ALICE MAE EDGE                        | 3-L-11-23   | 103.0  | 1-292590-000  |
| 2     | LYNN & YVONNE REUSSER                 | 3-L-11-21   | 70.90  | 47-000579-000 |
| 3     | ALICE MAE EDGE                        | 3-L-11-24   | 112.94 | 1-292590-000  |
| 4     | J & F CHAMBERS HOLDINGS, LLC          | 3-L-11-26.3 | 0.69   | 47-000606-000 |
| 5     | EDWARD G GROUX Jr                     | 3-L-11-26.4 | 11.38  | 47-000606-000 |
| 6     | EDWARD G GROUX Jr                     | 3-L-11-26.1 | 40.00  | 47-000606-000 |
| 7     | RICHARD L & R.L. ASTON                | 3-L-8-31.1  | 20.14  | 1-384429-000  |
| 8     | PAUL E & CAROLE L PITTMAN             | 3-L-8-31    | 14.46  | 1-385507-000  |
| 9     | STEVE & SHARON K VARGO                | 3-L-8-29    | 56.50  | 1-384424-000  |
| 10    | DONALD J & S.M. GAUS                  | 3-L-8-30    | 5.00   | 1-385506-000  |
| 11    | DONALD J & S.M. GAUS                  | 3-L-8-30.5  | 0.474  | 1-385506-000  |
| 12    | TUNNEL RIDGE LLC                      | 3-L-8-19    | 6.00   | 1-324196-000  |
| 13    | JEFF & JOLENE M EISENHAEUER           | 3-L-8-20    | 3.66   | 1-385485-000  |
| 14    | ALBERT T & BEATRICE V DAGUE           | 3-L-8-21    | 6.59   | 1-385505-000  |
| 15    | JAY T & MELISSA J MAUCK               | 3-L-8-22    | 5.86   | 1-329212-000  |
| 16    | DANIEL MCKEE                          | 3-L-8-23    | 4.11   | 1-329244-000  |



|                                      |
|--------------------------------------|
| <b>AS-DRILLED</b>                    |
| <b>SURFACE HOLE LOCATION (SHL):</b>  |
| UTM (NAD83, ZONE 17, METERS):        |
| NORTHING: 4,438,947.520              |
| EASTING: 537,467.805                 |
| <b>AS-DRILLED</b>                    |
| <b>LANDING POINT LOCATION (LPL):</b> |
| UTM (NAD83, ZONE 17, METERS):        |
| NORTHING: 4,439,089.837              |
| EASTING: 537,403.955                 |
| <b>AS-DRILLED</b>                    |
| <b>BOTTOM HOLE LOCATION (BHL):</b>   |
| UTM (NAD83, ZONE 17, METERS):        |
| NORTHING: 4,441,755.916              |
| EASTING: 536,186.648                 |

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P.S. 2270 *M.S. Wolf 1/25/16*

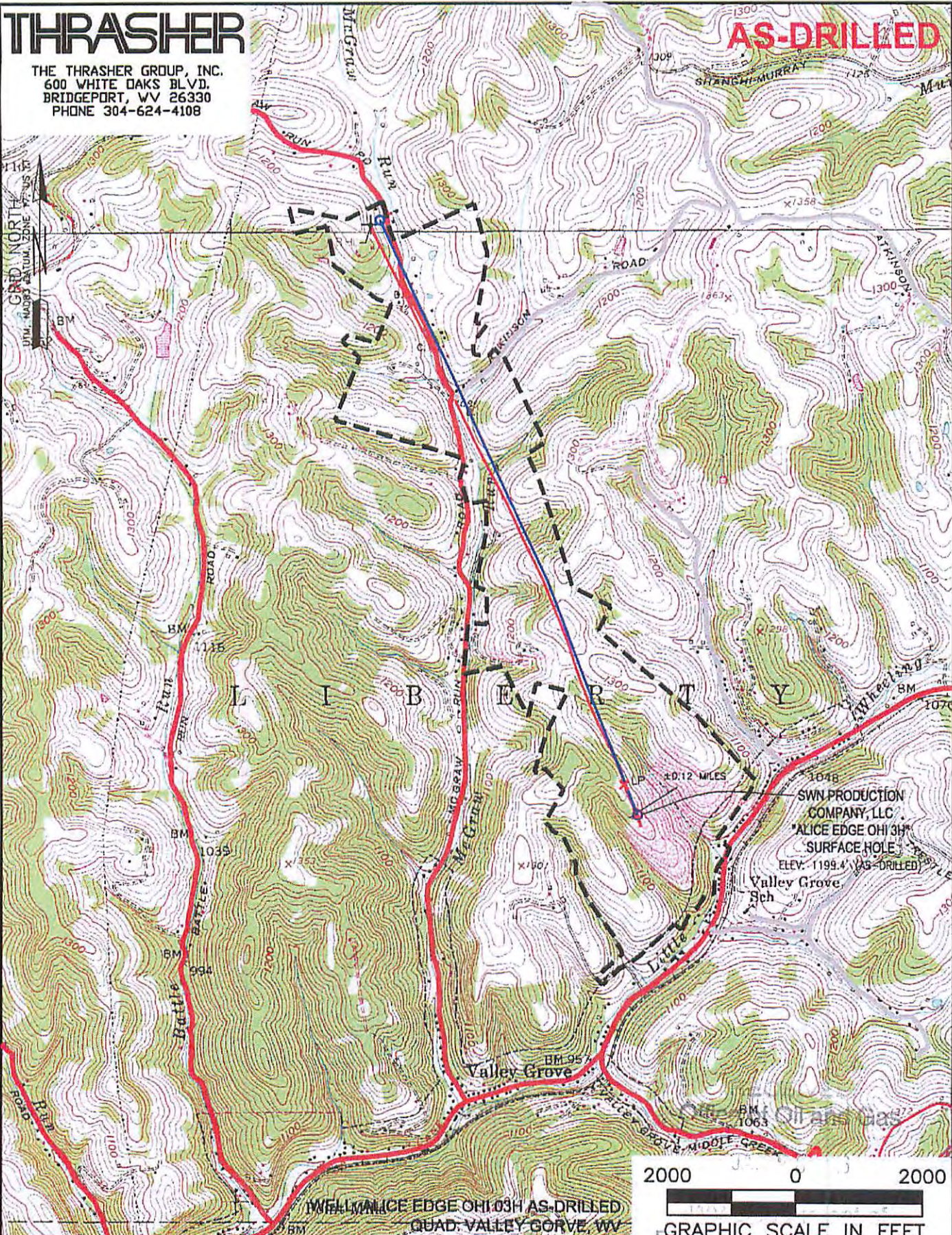
|   |  |   |
|---|--|---|
| <p>(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS</p> <p>WVDEP<br/>OFFICE OF OIL &amp; GAS<br/>601 57TH STREET<br/>CHARLESTON, WV 25034</p> | MINIMUM DEGREE OF ACCURACY: 1/200<br>PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)   | COMPANY: <b>SWN</b> Production Company, LLC<br>OPERATOR'S WELL #: ALICE EDGE OHI 3H<br>API WELL #: 47 069 00180<br>STATE COUNTY PERMIT    |
|   | WELL TYPE: OIL <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> PRODUCTION <input type="checkbox"/> DEEP <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> STORAGE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> | WATERSHED: UPPER OHIO SOUTH<br>DISTRICT: LIBERTY COUNTY: OHIO<br>SURFACE OWNER: ALICE MAE EDGE<br>OIL & GAS ROYALTY OWNER: ALICE MAE EDGE |

|   |  |
|---|--|
| DRILL <input checked="" type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input checked="" type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/><br>CONVERT <input type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/> OTHER CHANGE <input type="checkbox"/> (SPECIFY) | TARGET FORMATION: MARCELLUS<br>ESTIMATED DEPTH: 6,410 TVD 16,302 TMD                                 |
| WELL OPERATOR: SWN PRODUCTION COMPANY, LLC<br>ADDRESS: P.O. BOX 1300<br>CITY: JANE LEW STATE: WV ZIP CODE: 26378  | DESIGNATED AGENT: DEE SOUTHALL<br>ADDRESS: P.O. BOX 1300<br>CITY: JANE LEW STATE: WV ZIP CODE: 26378 |
| LEGEND:<br>○ PROPOSED SURFACE HOLE / BOTTOM HOLE<br>* EXISTING / PRODUCING WELLHEAD<br>✕ ABANDONED WELL<br>✕ PLUGGED & ABANDONED WELL<br>△ CUT CONDUCTOR  | REVISIONS:<br>--- LEASE BOUNDARY<br>--- DESIGN DHP<br>--- AS-DRILLED DHP<br>--- ABANDONED PATH       |

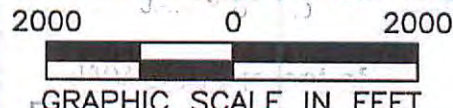
# THRASHER

THE THRASHER GROUP, INC.  
600 WHITE OAKS BLVD.  
BRIDGEPORT, WV 26330  
PHONE 304-624-4108

**AS-DRILLED**



WELL ALICE EDGE OHI 03H AS-DRILLED  
QUAD: VALLEY GROVE, WV



|   |  |  |  |  |  |
|---|--|--|--|--|--|
| <b>NAME AND DISTANCE TO THE NEAREST STREAM:</b><br>AN UNNAMED TRIBUTARY TO LITTLE WHEELING CREEK IS LOCATED ±0.12 MILES (NE) OF THE CENTER OF THE DRILL PAD.  |  | <b>STREAM CROSSING COORDINATES (NAD 83):</b><br>A. LAT: 40.115011' / LONG: -80.568805'<br>B. LAT: 40.117508' / LONG: -80.570425'<br>C. LAT: 40.120411' / LONG: -80.572151'<br>D. LAT: 40.122128' / LONG: -80.573241' |  | <b>COMPANY:</b><br>  |  |
| <b>WELL RESTRICTIONS:</b><br>WELL PAD, LOD, & E & S CONTROL FEATURES TO PERENNIAL STREAM, LAKE, POND, RESERVOIR OR WETLAND: >100 FEET<br>WELL PAD, LOD, & E & S CONTROL FEATURES TO NATURALLY PRODUCING TROUT STREAM: >300 FEET<br>WELL PAD, LOD, & E & S CONTROL FEATURES TO GROUNDWATER INTAKE OR PUBLIC WATER SUPPLY: >1000 FEET<br>WELL SHL TO EXISTING WATER WELL OR DEVELOPED SPRING: >250 FEET<br>CENTER OF PAD TO OCCUPIED DWELLING STRUCTURE: >625 FEET<br>CENTER OF PAD TO AGRICULTURAL BUILDINGS LARGER THAN 2500 SQ FT: >625 FEET |  | <b>OPERATOR'S</b><br>ALICE EDGE  |  |  |  |
| <b>FEMA FLOOD INFORMATION:</b><br>NO FLOOD ZONES.   |  | <b>WELL #:</b><br>OHI 3H   |  | <b>LOCATION:</b><br>LIBERTY DISTRICT,<br>OHIO, WEST VIRGINIA |  |
| <b>LEGEND:</b><br>○ PROPOSED SURFACE HOLE / BOTTOM HOLE<br>✖ EXISTING / PRODUCING WELLHEAD<br>✖ ABANDONED WELL<br>✖ PLUGGED & ABANDONED WELL<br>△ CUT CONDUCTOR<br>(S) EXISTING SPRING<br>(W) EXISTING WATER WELL<br>— ACCESS ROAD<br>— ACCESS ROAD TO PREV. SITE<br>— HIGHWAY/INTERSTATE<br>— COUNTY ROAD  |  | <b>AS-DRILLED SURFACE HOLE LOCATION:</b><br>GEOGRAPHIC (NAD83):<br>LATITUDE: 40.099987'<br>LONGITUDE: -80.560419'  |  | 03/04/2016   |  |
|   |  | <b>AS-DRILLED BOTTOM HOLE LOCATION:</b><br>GEOGRAPHIC (NAD83):<br>LATITUDE: 40.125345'<br>LONGITUDE: -80.575292'   |  | <b>REVISIONS:</b>  |  |
|   |  | <b>DATE:</b> 01-25-2016  |  | <b>DRAWN BY:</b> KJP   |  |
|   |  | <b>SCALE:</b> 1" = 2000'   |  | <b>DRAWING NO:</b> 030-2725                                  |  |
|   |  | <b>TOPOGRAPHIC MAP</b>   |  | <b>PROPERTY NUMBER</b> 2501162360                            |  |
|   |  | <b>PAD ID</b> 3001155602   |  |  |  |