

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

API 47 - 051 - 02297 County MARSHALL District SAND HILL
Quad MOUNDSVILLE Pad Name BETTY SCHAFFER MSH PAD Field/Pool Name PANHANDLE FIELD WET
Farm name BETTY JANE SCHAFFER Well Number BETTY SCHAFFER MSH 8H
Operator (as registered with the OOG) SWN PRODUCTION COMPANY, LLC
Address PO BOX 12359 City SPRING State TX Zip 77391-2359

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,426,813.904 Easting 531,107.946
Landing Point of Curve Northing 4,426,696.032 Easting 531,356.483
Bottom Hole Northing 4,424,785.481 Easting 532,079.900

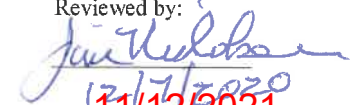
Elevation (ft) 848.4' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution 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 2/19/2020 Date drilling commenced 3/19/2020 Date drilling ceased 3/31/2020
Date completion activities began 7/13/2020 Date completion activities ceased 8/20/2020 RECEIVED
Verbal plugging (Y/N) N Date permission granted N/A Granted by N/A
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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug
Freshwater depth(s) ft 280' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 802' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 352' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:

11/12/2020

API 47-051 - 02297 Farm name BETTY JANE SCHAFFER Well number BETTY SCHAFFER MSH 8H

| CASING STRINGS | Hole Size | Casing Size | Depth | New or Used | Grade wt/ft | Basket Depth(s) | Did cement circulate (Y/ N) * Provide details below* |
|---------------------------|------------------|-------------|-------|-------------|-------------|-----------------|---|
| Conductor | 24 | 20 | 126 | NEW | J-55/94# | | Y |
| Surface | 17.5 | 13.375 | 331 | NEW | J-55/54.50# | | Y, 17 BBLS |
| Coal | SEE INTERMEDIATE | | | | | | |
| Intermediate 1 | 12.25 | 9.625 | 1710 | NEW | J-55/36# | | Y, 39 BBLS |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8.75/8.50 | 5.5 | 20437 | NEW | P-110/20# | | Y, 75 BBLS |
| Tubing | | 2.875 | 6366 | NEW | P-110/6.5# | | N |
| Packer type and depth set | | | | | | | |

Comment Details _____

| CEMENT DATA | Class/Type of Cement | Number of Sacks | Slurry wt (ppg) | Yield (ft ³ /sks) | Volume (ft ³) | Cement Top (MD) | WOC (hrs) |
|----------------|----------------------|------------------|-----------------|------------------------------|---------------------------|-----------------|-----------|
| Conductor | CLASS A | GROUT TO SURFACE | | | | SURFACE | 24 |
| Surface | CLASS A | 340 | 15.60 | 1.20 | 408 | SURFACE | 8 |
| Coal | SEE INTERMEDIATE | | | | | | |
| Intermediate 1 | CLASS A | 685 | 15.60 | 1.19 | 815.15 | SURFACE | 8 |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | CLASS A | 3,850 | 15.60 | 1.21 | 4,658.5 | SURFACE | 24 |
| Tubing | | | | | | | |

Drillers TD (ft) 20,442' Loggers TD (ft) 20,442'
 Deepest formation penetrated MARCELLUS Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5,311'

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

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

SURFACE: 7 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 INTERMEDIATE: 24 CENTRALIZERS - EVERY THIRD JOINT OF CASING
 PRODUCTION: 181 CENTRALIZERS - EVERY THIRD JOINT FROM SURFACE TO TOP OF CURVE, THEN EVERY JOINT UNTIL TD

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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 _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

| | |
|--------------------------------|----------------------|
| Job Start Date: | 7/13/2020 |
| Job End Date: | 8/9/2020 |
| State: | West Virginia |
| County: | Marshall |
| API Number: | 47-051-02297-00-00 |
| Operator Name: | Southwestern Energy |
| Well Name and Number: | Betty Schafer MSH 8H |
| Latitude: | 39.99092800 |
| Longitude: | -80.63561500 |
| Datum: | NAD83 |
| Federal Well: | NO |
| Indian Well: | NO |
| True Vertical Depth: | 6,132 |
| Total Base Water Volume (gal): | 20,639,013 |
| 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 |
|----------------|-------------|------------|-------------|--|--|--|----------------|
| Fresh Water | Halliburton | Base Fluid | | | | | |
| | | | Water | 7732-18-5 | 100.00000 | 73.05679 | Density = 8.34 |
| Produced Water | Halliburton | Base Fluid | | | | | |
| | | | Water | 7732-18-5 | 100.00000 | 17.13419 | Density = 8.50 |

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| Ingredients | Listed Above | Listed Above | | | | | |
|-----------------------------------|--------------|--------------------------|-------|--------------|-----------|---------|--|
| | | | Water | 7732-18-5 | 100.00000 | 0.48854 | |
| HYDROCHLORIC ACID, 22 BAUME | Halliburton | Solvent | | Listed Below | | | |
| Sand-Common White-100 Mesh, SSA-2 | Halliburton | Proppant | | Listed Below | | | |
| HAI-501 | Halliburton | Acid Corrosion Inhibitor | | Listed Below | | | |
| LEGEND(TM) LD-7750W | MultiChem | Scale Control | | Listed Below | | | |
| LD-2950 | MultiChem | Friction Reducer | | Listed Below | | | |
| Excelerate LX-15 | Halliburton | Friction Reducer | | Listed Below | | | |
| Sand-Premium White-40/70 | Halliburton | Proppant | | Listed Below | | | |
| MC MX 8-4743 | MultiChem | Additive | | | | | |

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| | | | | | | | |
|-------|-------------|----------|--|--------------|--|--|--|
| | | | | Listed Below | | | |
| FE-2A | Halliburton | Additive | | | | | |
| | | | | Listed Below | | | |

Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.

| | | | | | | | |
|--|--|--|---|-------------|-----------|---------|--|
| | | | Crystalline silica, quartz | 14808-60-7 | 100.00000 | 9.14541 | |
| | | | Hydrochloric acid | 7647-01-0 | 30.00000 | 0.05418 | |
| | | | Complex Amine Compound | Proprietary | 60.00000 | 0.05068 | |
| | | | Hydrotreated light petroleum distillate | 64742-47-8 | 30.00000 | 0.02706 | |
| | | | Sodium nitrate | 7631-99-4 | 60.00000 | 0.02158 | |
| | | | Methanol | 67-56-1 | 100.00000 | 0.00562 | |
| | | | Ethoxylated alcohols | Proprietary | 5.00000 | 0.00422 | |
| | | | Complex Amine Compound | Proprietary | 60.00000 | 0.00345 | |
| | | | Citric acid | 77-92-9 | 60.00000 | 0.00270 | |
| | | | Sodium molybdate | 10102-40-6 | 5.00000 | 0.00180 | |
| | | | Poly(oxy-1,2-ethanediyl), alpha-tridecyl-omega-hydroxy-, branched | 69011-36-5 | 1.00000 | 0.00084 | |
| | | | Adipic acid | 124-04-9 | 1.00000 | 0.00084 | |
| | | | Sodium chloride | 7647-14-5 | 5.00000 | 0.00048 | |
| | | | Phosphoric Acid Salt | Proprietary | 5.00000 | 0.00044 | |
| | | | Surfactant | Proprietary | 5.00000 | 0.00029 | |
| | | | Sorbitan, mono-9-octadecenoate, (Z) | 1338-43-8 | 5.00000 | 0.00029 | |
| | | | Modified thiourea polymer | Proprietary | 30.00000 | 0.00009 | |
| | | | Mixture of dimer and trimer fatty acids of indefinite composition derived from tall oil | 61790-12-3 | 30.00000 | 0.00009 | |
| | | | Ethoxylated alcohols | Proprietary | 5.00000 | 0.00007 | |

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| | | | | | | | |
|--|--|--|-------------------------------|-------------|---------|---------|--|
| | | | Alkoxyated polyhydric alcohol | Proprietary | 1.00000 | 0.00006 | |
| | | | Organic chloride compound | Proprietary | 1.00000 | 0.00006 | |
| | | | Sodium acetate | 127-09-3 | 0.10000 | 0.00004 | |
| | | | Sodium lactate | 72-17-3 | 0.10000 | 0.00004 | |
| | | | Monopotassium phosphate | 7778-77-0 | 0.10000 | 0.00004 | |
| | | | Yeast extract | 8013-01-2 | 0.10000 | 0.00004 | |
| | | | Hexadecene | 629-73-2 | 5.00000 | 0.00002 | |
| | | | Propargyl alcohol | 107-19-7 | 5.00000 | 0.00002 | |
| | | | Formaldehyde | 50-00-0 | 0.10000 | 0.00001 | |
| | | | Sodium hydroxide | 1310-73-2 | 0.01000 | 0.00000 | |
| | | | Sodium glycolate | 2836-32-0 | 0.01000 | 0.00000 | |
| | | | Nitrated acetate salt | Proprietary | 0.01000 | 0.00000 | |
| | | | Acrylamide | 79-06-1 | 0.01000 | 0.00000 | |
| | | | Organic salt #1 | Proprietary | 0.01000 | 0.00000 | |
| | | | Organic salt #2 | Proprietary | 0.01000 | 0.00000 | |

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

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

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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(l) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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**BETTY SCHAFER MSH 8H
ATTACHMENT 1
PERF REPORT**

| STAGE NUM | Perf Date | Perf Bottom MD | Perf Top MD2 | # SHOTS PER STG |
|-----------|-----------|----------------|--------------|-----------------|
| 1 | 7/6/2020 | 20,388 | 20,300 | 36 |
| 2 | 7/13/2020 | 20,264 | 20,085 | 36 |
| 3 | 7/14/2020 | 20,052 | 19,873 | 36 |
| 4 | 7/15/2020 | 19,839 | 19,657 | 36 |
| 5 | 7/17/2020 | 19,627 | 19,448 | 36 |
| 6 | 7/18/2020 | 19,415 | 19,236 | 36 |
| 7 | 7/19/2020 | 19,202 | 19,024 | 36 |
| 8 | 7/20/2020 | 18,990 | 18,811 | 36 |
| 9 | 7/20/2020 | 18,778 | 18,599 | 36 |
| 10 | 7/21/2020 | 18,566 | 18,387 | 36 |
| 11 | 7/22/2020 | 18,353 | 18,174 | 36 |
| 12 | 7/22/2020 | 18,141 | 17,962 | 36 |
| 13 | 7/23/2020 | 17,929 | 17,750 | 36 |
| 14 | 7/23/2020 | 17,719 | 17,537 | 36 |
| 15 | 7/23/2020 | 17,504 | 17,325 | 36 |
| 16 | 7/23/2020 | 17,292 | 17,113 | 36 |
| 17 | 7/24/2020 | 17,081 | 16,900 | 36 |
| 18 | 7/24/2020 | 16,867 | 16,688 | 36 |
| 19 | 7/24/2020 | 16,655 | 16,476 | 36 |
| 20 | 7/25/2020 | 16,442 | 16,263 | 36 |
| 21 | 7/25/2020 | 16,230 | 16,051 | 36 |
| 22 | 7/26/2020 | 16,018 | 15,839 | 36 |
| 23 | 7/26/2020 | 15,802 | 15,627 | 36 |
| 24 | 7/26/2020 | 15,593 | 15,414 | 36 |
| 25 | 7/27/2020 | 15,381 | 15,202 | 36 |
| 26 | 7/27/2020 | 15,169 | 14,990 | 36 |
| 27 | 7/27/2020 | 14,956 | 14,777 | 36 |
| 28 | 7/28/2020 | 14,744 | 14,568 | 36 |
| 29 | 7/28/2020 | 14,532 | 14,350 | 36 |
| 30 | 7/28/2020 | 14,319 | 14,140 | 36 |
| 31 | 7/29/2020 | 14,107 | 13,928 | 36 |
| 32 | 7/29/2020 | 13,895 | 13,716 | 36 |
| 33 | 7/29/2020 | 13,682 | 13,503 | 36 |
| 34 | 7/29/2020 | 13,470 | 13,291 | 36 |
| 35 | 7/30/2020 | 13,258 | 13,075 | 36 |
| 36 | 7/30/2020 | 13,048 | 12,867 | 36 |
| 37 | 7/30/2020 | 12,833 | 12,654 | 36 |
| 38 | 7/31/2020 | 12,621 | 12,442 | 36 |
| 39 | 7/31/2020 | 12,406 | 12,230 | 36 |
| 40 | 7/31/2020 | 12,196 | 12,017 | 36 |
| 41 | 7/31/2020 | 11,984 | 11,805 | 36 |
| 42 | 8/1/2020 | 11,775 | 11,593 | 36 |
| 43 | 8/1/2020 | 11,559 | 11,380 | 36 |

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**BETTY SCHAFER MSH 8H
ATTACHMENT 1
PERF REPORT**

| STAGE NUM | Perf Date | Perf Bottom MD | Perf Top MD2 | # SHOTS PER STG |
|-----------|-----------|----------------|--------------|-----------------|
| 44 | 8/1/2020 | 11,347 | 11,168 | 36 |
| 45 | 8/2/2020 | 11,135 | 10,956 | 36 |
| 46 | 8/2/2020 | 10,917 | 10,743 | 36 |
| 47 | 8/2/2020 | 10,710 | 10,531 | 36 |
| 48 | 8/2/2020 | 10,498 | 10,319 | 36 |
| 49 | 8/3/2020 | 10,285 | 10,107 | 36 |
| 50 | 8/3/2020 | 10,068 | 9,894 | 36 |
| 51 | 8/3/2020 | 9,861 | 9,682 | 36 |
| 52 | 8/3/2020 | 9,649 | 9,470 | 30 |
| 53 | 8/4/2020 | 9,436 | 9,257 | 36 |
| 54 | 8/4/2020 | 9,224 | 9,045 | 72 |
| 55 | 8/4/2020 | 9,012 | 8,833 | 36 |
| 56 | 8/5/2020 | 8,799 | 8,620 | 36 |
| 57 | 8/5/2020 | 8,587 | 8,408 | 36 |
| 58 | 8/6/2020 | 8,375 | 8,198 | 36 |
| 59 | 8/6/2020 | 8,162 | 7,983 | 36 |
| 60 | 8/6/2020 | 7,950 | 7,771 | 36 |
| 61 | 8/7/2020 | 7,738 | 7,559 | 36 |
| 62 | 8/7/2020 | 7,525 | 7,346 | 36 |
| 63 | 8/7/2020 | 7,313 | 7,134 | 36 |
| 64 | 8/8/2020 | 7,101 | 6,922 | 36 |
| 65 | 8/8/2020 | 6,888 | 6,715 | 36 |
| 66 | 8/8/2020 | 6,676 | 6,497 | 36 |
| 67 | 8/9/2020 | 6,464 | 6,285 | 36 |

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ATTACHMENT 2
STIM REPORT

| STAGE NUM | Stim Date | Ave Pump Rate (BPM) | Ave Treatment | Max Breakdown | ISIP (PSI) | Amount of Proppant (lbs) | Amount of water bbls | Amount of nitrogen/othr |
|-----------|-----------|---------------------|---------------|---------------|------------|--------------------------|----------------------|-------------------------|
| 1 | 7/13/2020 | 63.9 | 7,860 | 7,860 | 4,103 | 179,930 | 6,045 | 0 |
| 2 | 7/13/2020 | 80 | 7,995 | 5,976 | 4,084 | 280,720 | 8,835 | 0 |
| 3 | 7/15/2020 | 75.4 | 7,815 | 6,863 | 4,312 | 260,470 | 7,604 | 0 |
| 4 | 7/17/2020 | 83.7 | 8,057 | 5,885 | 4,298 | 260,380 | 7,777 | 0 |
| 5 | 7/18/2020 | 80 | 7,972 | 6,159 | 4,515 | 279,860 | 8,507 | 0 |
| 6 | 7/19/2020 | 77 | 7,820 | 6,392 | 4,375 | 280,360 | 7,414 | 0 |
| 7 | 7/20/2020 | 82.2 | 8,085 | 6,016 | 4,288 | 259,930 | 6,701 | 0 |
| 8 | 7/20/2020 | 80.9 | 8,158 | 6,078 | 4,410 | 259,100 | 7,179 | 0 |
| 9 | 7/21/2020 | 80.9 | 8,054 | 5,793 | 4,095 | 260,410 | 6,834 | 0 |
| 10 | 7/21/2020 | 80.8 | 7,847 | 5,966 | 4,424 | 259,950 | 7,287 | 0 |
| 11 | 7/22/2020 | 85.9 | 8,218 | 5,708 | 4,112 | 258,550 | 7,203 | 0 |
| 12 | 7/23/2020 | 81.6 | 7,857 | 5,589 | 4,398 | 267,780 | 7,532 | 0 |
| 13 | 7/23/2020 | 89.9 | 8,468 | 5,756 | 4,441 | 261,140 | 7,228 | 0 |
| 14 | 7/23/2020 | 90.2 | 8,514 | 5,839 | 4,141 | 260,450 | 7,376 | 0 |
| 15 | 7/23/2020 | 88.6 | 8,024 | 5,797 | 4,312 | 258,990 | 7,356 | 0 |
| 16 | 7/24/2020 | 84.7 | 8,080 | 6,110 | 4,375 | 260,250 | 7,338 | 0 |
| 17 | 7/24/2020 | 84.2 | 8,512 | 5,753 | 4,319 | 261,420 | 7,620 | 0 |
| 18 | 7/24/2020 | 82.6 | 8,107 | 5,847 | 4,002 | 261,030 | 7,144 | 0 |
| 19 | 7/25/2020 | 84.6 | 8,160 | 4,890 | 4,095 | 257,980 | 7,151 | 0 |
| 20 | 7/25/2020 | 88.2 | 8,469 | 5,729 | 4,133 | 260,370 | 7,441 | 0 |
| 21 | 7/25/2020 | 85.5 | 8,085 | 5,423 | 4,422 | 258,750 | 7,131 | 0 |
| 22 | 7/26/2020 | 85.2 | 8,358 | 5,534 | 3,971 | 260,510 | 7,073 | 0 |
| 23 | 7/26/2020 | 86.1 | 8,347 | 5,485 | 4,033 | 260,100 | 7,500 | 0 |
| 24 | 7/27/2020 | 83.8 | 8,077 | 5,777 | 4,123 | 260,810 | 7,132 | 0 |
| 25 | 7/27/2020 | 85.2 | 7,962 | 5,539 | 4,073 | 260,270 | 7,244 | 0 |
| 26 | 7/27/2020 | 86.8 | 8,092 | 5,624 | 4,281 | 259,710 | 7,119 | 0 |
| 27 | 7/28/2020 | 86.1 | 7,979 | 5,758 | 4,167 | 260,470 | 7,092 | 0 |
| 28 | 7/28/2020 | 96.4 | 8,274 | 5,855 | 4,050 | 260,060 | 7,206 | 0 |
| 29 | 7/28/2020 | 90.9 | 7,826 | 5,402 | 4,189 | 261,290 | 7,213 | 0 |
| 30 | 7/28/2020 | 84.1 | 7,772 | 5,799 | 4,084 | 260,400 | 7,000 | 0 |
| 31 | 7/29/2020 | 91.1 | 8,082 | 6,323 | 3,823 | 258,350 | 7,189 | 0 |
| 32 | 7/29/2020 | 96.6 | 7,970 | 5,769 | 4,142 | 259,460 | 7,191 | 0 |
| 33 | 7/29/2020 | 90.7 | 7,694 | 5,268 | 4,067 | 261,820 | 6,966 | 0 |
| 34 | 7/30/2020 | 86.3 | 7,680 | 5,541 | 4,159 | 260,130 | 6,876 | 0 |
| 35 | 7/30/2020 | 98.6 | 7,919 | 5,550 | 3,970 | 259,090 | 7,468 | 0 |
| 36 | 7/30/2020 | 94.8 | 7,895 | 4,839 | 4,179 | 260,350 | 7,421 | 0 |
| 37 | 7/30/2020 | 86 | 7,566 | 5,394 | 4,244 | 259,730 | 7,037 | 0 |
| 38 | 7/31/2020 | 88 | 7,534 | 5,536 | 3,938 | 260,790 | 7,330 | 0 |
| 39 | 7/31/2020 | 84.2 | 7,921 | 5,302 | 4,060 | 260,060 | 7,591 | 0 |
| 40 | 7/31/2020 | 85.3 | 7,364 | 5,382 | 4,190 | 259,930 | 7,304 | 0 |
| 41 | 8/1/2020 | 98.9 | 7,624 | 5,165 | 4,338 | 259,390 | 7,370 | 0 |
| 42 | 8/1/2020 | 99.4 | 7,634 | 6,130 | 4,253 | 320,260 | 8,576 | 0 |
| 43 | 8/1/2020 | 99 | 7,630 | 5,343 | 4,241 | 259,700 | 8,477 | 0 |
| 44 | 8/1/2020 | 89.7 | 7,860 | 5,106 | 4,096 | 260,630 | 8,471 | 0 |
| 45 | 8/2/2020 | 99.7 | 7,604 | 5,335 | 4,147 | 260,320 | 8,251 | 0 |
| 46 | 8/2/2020 | 99.2 | 7,634 | 6,032 | 4,213 | 260,020 | 7,258 | 0 |
| 47 | 8/2/2020 | 97.8 | 7,510 | 5,610 | 4,239 | 261,640 | 7,368 | 0 |
| 48 | 8/2/2020 | 94.5 | 7,481 | 5,211 | 4,166 | 260,680 | 7,410 | 0 |
| 49 | 8/3/2020 | 88.8 | 7,135 | 5,345 | 4,200 | 259,320 | 7,129 | 0 |
| 50 | 8/3/2020 | 99.1 | 7,431 | 5,593 | 4,230 | 261,760 | 7,310 | 0 |
| 51 | 8/3/2020 | 92.7 | 7,592 | 5,983 | 4,089 | 259,640 | 7,370 | 0 |
| 52 | 8/3/2020 | 82.5 | 7,379 | 5,964 | 4,187 | 260,810 | 7,331 | 0 |
| 53 | 8/4/2020 | 92.2 | 7,545 | 6,013 | 4,179 | 258,970 | 7,291 | 0 |

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ATTACHMENT 2

STIM REPORT

| STAGE NUM | Stim Date | Ave Pump Rate (BPM) | Ave Treatment | Max Breakdown | ISIP (PSI) | Amount of Proppant (lbs) | Amount of water bbls | Amount of nitrogen/othe |
|-----------|-----------|---------------------|---------------|---------------|------------|--------------------------|----------------------|-------------------------|
| 54 | 8/4/2020 | 86.4 | 6,806 | 5,871 | 4,128 | 258,660 | 9,083 | 0 |
| 55 | 8/5/2020 | 87 | 7,471 | 5,821 | 4,002 | 260,040 | 7,300 | 0 |
| 56 | 8/5/2020 | 79.9 | 6,850 | 5,908 | 4,146 | 261,280 | 7,233 | 0 |
| 57 | 8/6/2020 | 85.3 | 7,364 | 6,251 | 4,109 | 260,220 | 7,204 | 0 |
| 58 | 8/6/2020 | 92.4 | 7,123 | 6,126 | 3,856 | 259,890 | 7,153 | 0 |
| 59 | 8/6/2020 | 93.2 | 7,255 | 6,115 | 4,098 | 258,920 | 7,254 | 0 |
| 60 | 8/7/2020 | 95.4 | 7,256 | 6,263 | 4,059 | 256,490 | 7,211 | 0 |
| 61 | 8/7/2020 | 94.9 | 7,084 | 6,069 | 3,860 | 259,470 | 7,283 | 0 |
| 62 | 8/7/2020 | 96.3 | 7,446 | 5,828 | 3,987 | 258,240 | 6,996 | 0 |
| 63 | 8/7/2020 | 96.9 | 7,206 | 6,060 | 4,027 | 266,780 | 7,696 | 0 |
| 64 | 8/8/2020 | 98.2 | 7,237 | 6,161 | 3,953 | 269,480 | 7,169 | 0 |
| 65 | 8/8/2020 | 99.3 | 6,792 | 6,147 | 4,024 | 257,730 | 6,979 | 0 |
| 66 | 8/9/2020 | 97.6 | 6,723 | 5,950 | 4,180 | 263,180 | 7,107 | 0 |
| 67 | 8/9/2020 | 86.8 | 6,278 | 5,930 | 4,023 | 282,980 | 7,145 | 0 |

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Well Name: **BETTY SCHAFER MSH 8H**

47051022970000

| LITHOLOGY/FORMATION | TOP DEPTH, MD (FT) | TOP DEPTH, TVD (FT) | BOTTOM DEPTH, MD (FT) | BOTTOM DEPTH, TVD (FT) | QUANTITY AND TYPE OF FLUID |
|---------------------|--------------------|---------------------|-----------------------|------------------------|----------------------------|
| Base of Fresh Water | 0.00 | 0.00 | 280.00 | 280.00 | |
| Top of Salt Water | 802.00 | 802.00 | NA | NA | |
| Pittsburgh Coal | 352.00 | 352.00 | 358.00 | 358.00 | |
| Raven Cliff (ss) | 1012.00 | 1010.00 | 1517.00 | 1511.00 | |
| Big Injun (ss) | 1517.00 | 1511.00 | 1951.00 | 1941.00 | |
| Berea (siltstone) | 1951.00 | 1941.00 | 5351.00 | 5313.00 | |
| Rhinestreet (shale) | 5351.00 | 5313.00 | 5732.00 | 5668.00 | |
| Cashaqua (shale) | 5732.00 | 5668.00 | 5940.00 | 5832.00 | |
| Burket (shale) | 5940.00 | 5832.00 | 5952.00 | 5841.00 | |
| Tully (ls) | 5952.00 | 5841.00 | 6002.00 | 5872.00 | |
| Mahantango (shale) | 6002.00 | 5872.00 | 6209.00 | 5974.00 | |
| Marcellus (shale) | 6209.00 | 5974.00 | NA | NA | GAS |

RECEIVED
 Office of Oil and Gas
 WV Department of
 Environmental Protection
OCT 26 2020

Latitude: 40°00'00" SURFACE HOLE 2,977'

Latitude: 39°57'30"

BOTTOM HOLE 7,748'

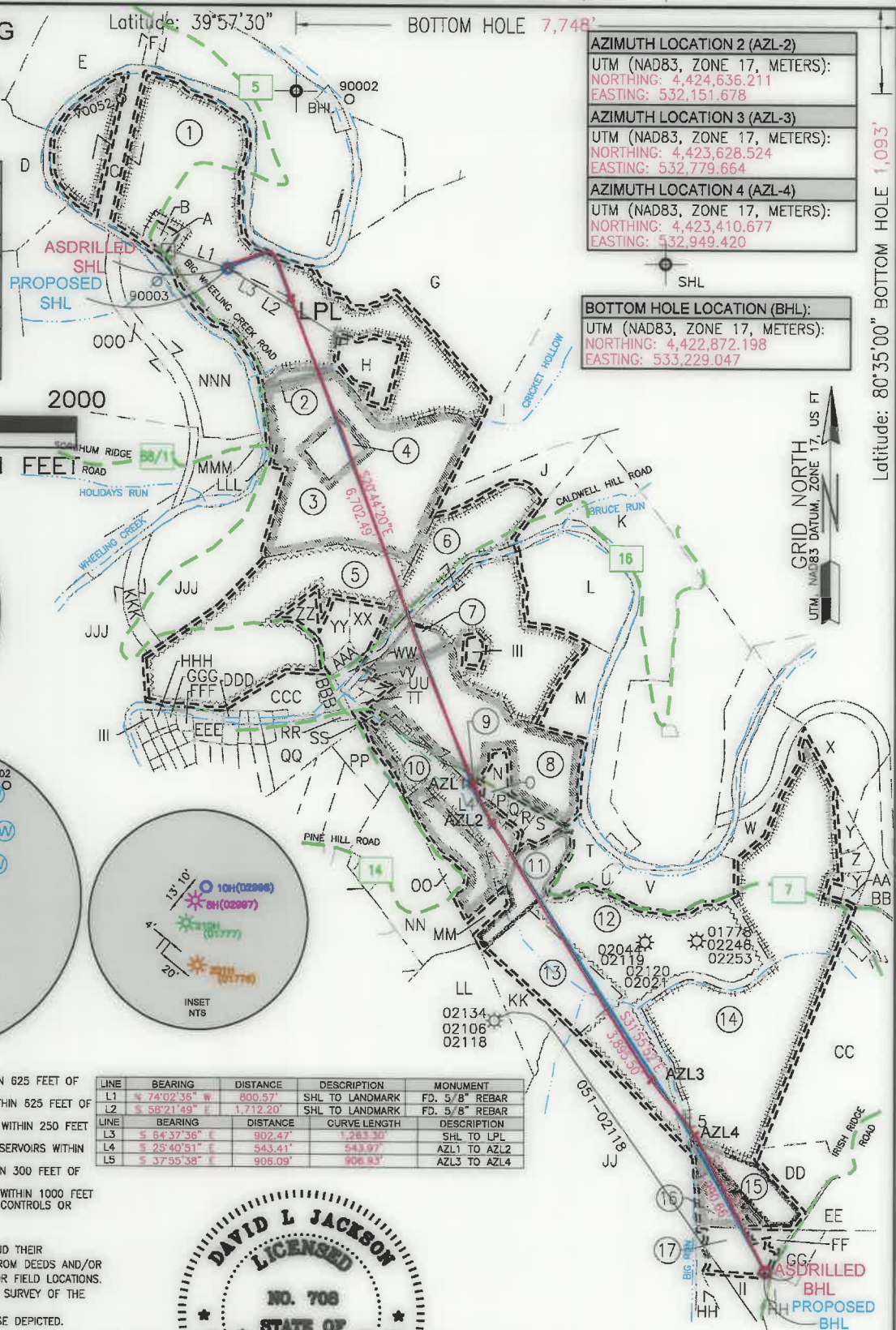
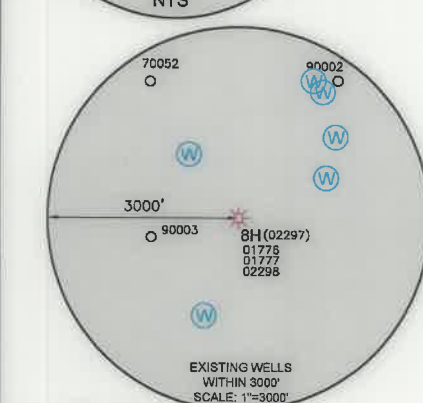
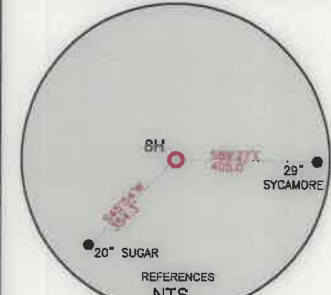
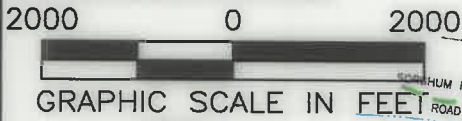
JACKSON SURVEYING INC.

2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

| AZIMUTH LOCATION 2 (AZL-2) | |
|-------------------------------|--|
| UTM (NAD83, ZONE 17, METERS): | |
| NORTHING: 4,424,636.211 | |
| EASTING: 532,151.678 | |
| AZIMUTH LOCATION 3 (AZL-3) | |
| UTM (NAD83, ZONE 17, METERS): | |
| NORTHING: 4,423,628.524 | |
| EASTING: 532,779.664 | |
| AZIMUTH LOCATION 4 (AZL-4) | |
| UTM (NAD83, ZONE 17, METERS): | |
| NORTHING: 4,423,410.677 | |
| EASTING: 532,949.420 | |

| BOTTOM HOLE LOCATION (BHL): | |
|-------------------------------|--|
| UTM (NAD83, ZONE 17, METERS): | |
| NORTHING: 4,422,872.198 | |
| EASTING: 533,229.047 | |

| SURFACE HOLE LOCATION (SHL): | |
|-------------------------------|--|
| UTM (NAD83, ZONE 17, METERS): | |
| NORTHING: 4,426,813.904 | |
| EASTING: 531,107.946 | |
| LANDING POINT LOCATION (LPL): | |
| UTM (NAD83, ZONE 17, METERS): | |
| NORTHING: 4,426,696.032 | |
| EASTING: 531,356.483 | |
| AZIMUTH LOCATION 1 (AZL-1): | |
| UTM (NAD83, ZONE 17, METERS): | |
| NORTHING: 4,424,785.481 | |
| EASTING: 532,079.900 | |



WELL RESTRICTIONS

- NO OCCUPIED DWELLINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO AGRICULTURE BUILDINGS > 2500 SQ FT. WITHIN 625 FEET OF CENTER OF PAD.
- NO WATER WELLS OR DEVELOPED SPRINGS ARE WITHIN 250 FEET OF PROPOSED WELL.
- NO PERENNIAL STREAMS, LAKES, PONDS, OR RESERVOIRS WITHIN 100 FEET OF THE LIMITS OF DISTURBANCE.
- NO NATURALLY PRODUCING TROUT STREAM WITHIN 300 FEET OF LIMITS OF DISTURBANCE.
- NO GROUND INTAKE OR PUBLIC WATER SUPPLY WITHIN 1000 FEET OF WELL PAD, LIMITS OF DISTURBANCE, E & S CONTROLS OR PUBLIC WATER SUPPLY.

| LINE | BEARING | DISTANCE | DESCRIPTION | MONUMENT |
|------|---------------|-----------|-----------------|----------------|
| L1 | N 74°02'36" W | 800.57' | SHL TO LANDMARK | FD. 5/8" REBAR |
| L2 | S 58°21'49" E | 1,712.20' | SHL TO LANDMARK | FD. 5/8" REBAR |
| LINE | BEARING | DISTANCE | DESCRIPTION | MONUMENT |
| L3 | S 64°37'36" E | 902.47' | CURVE LENGTH | 1,283.30' |
| L4 | S 25°40'51" E | 543.41' | | 543.97' |
| L5 | S 37°55'38" E | 906.09' | | 906.93' |

NOTES ON SURVEY

- SURFACE AND ROYALTY OWNER INFORMATION AND THEIR BOUNDARIES SHOWN HEREON WERE PLOTTED FROM DEEDS AND/OR TAX PARCEL MAPS PROVIDED BY CLIENT AND/OR FIELD LOCATIONS.
- THIS PLAT DOES NOT REPRESENT A BOUNDARY SURVEY OF THE PARCELS SHOWN HEREON.
- ALL INSETS ARE GRID NORTH UNLESS OTHERWISE DEPICTED.

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. 708

David L Jackson



COMPANY:



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

WVDEP
OFFICE OF OIL & GAS
601 57TH STREET
CHARLESTON, WV 25034

MINIMUM DEGREE OF ACCURACY: 1/200

PROVEN SOURCE OF ELEVATION: SURVEY GRADE GPS (NAVD 88, US FT)

BETTY SCHAFER MSH

OPERATOR'S WELL #: 8H

API WELL #: 47 051 02297

STATE COUNTY PERMIT

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

WATERSHED: WHEELING CREEK (HUC-10) ELEVATION: 848.4'

DISTRICT: SAND HILL COUNTY: MARSHALL QUADRANGLE: MOUNDVILLE, WV - OH

SURFACE OWNER: BETTY JANE SCHAFER ACREAGE: ±205.06

OIL & GAS ROYALTY OWNER: BETTY JANE SCHAFER ACREAGE: ±205.06

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

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

TARGET FORMATION: MARCELLUS ESTIMATED DEPTH: 11/12/2021 TMD

WELL OPERATOR: SWN PRODUCTION COMPANY, LLC DESIGNATED AGENT: BRITTANY WOODY

ADDRESS: 1300 FORT PIERPONT RD. SUITE 200 ADDRESS: 1300 FORT PIERPONT RD. SUITE 200

CITY: MORGANTOWN STATE: WV ZIP CODE: 26508 CITY: MORGANTOWN STATE: WV ZIP CODE: 26508

| LEGEND: | REVISIONS: | DATE: |
|---------------------------------------|---------------------|--------------------|
| ○ PROPOSED SURFACE HOLE / BOTTOM HOLE | — SURVEYED BOUNDARY | 10-14-2020 |
| ⊙ EXISTING / PRODUCING WELLHEAD | — DRILLING UNIT | |
| LPL* LANDING POINT LOCATION | == LEASE BOUNDARY | |
| ⊕ EXISTING WATER WELL | — AS DRILLED PATH | |
| ⊙ EXISTING SPRING | — PROPOSED PATH | |
| | | DRAWN BY: N. MANO |
| | | SCALE: 1" = 2000' |
| | | DRAWING NO: |
| | | WELL LOCATION PLAT |

**JACKSON SURVEYING
INC.**



2413 EAST PIKE ST. # 112
Clarksburg, WV 26302
304-623-5851

| WELL BORE TABLE FOR SURFACE / ROYALTY OWNERS | | |
|--|---|------------|
| TRACT | SURFACE OWNER (S) / ROYALTY OWNER (R) | TAX PARCEL |
| 1 | BETTY JANE SCHAFER (S)/(R) | 12-9-22 |
| TRACT | SURFACE OWNER | TAX PARCEL |
| 2 | JEWELL L. ROMAN (S) | 12-10-01 |
| 3 | PATRICIA A. FISH & FREDERICK W. FISH (S) | 12-10-1.2 |
| 4 | CONSOLIDATION COAL COMPANY/MURRAY ENERGY (S) | 12-10-1.1 |
| 5 | RUSSELL ROBERT WILSON II, ET AL (S) | 12-10-4 |
| 6 | ECO-VRINDABAN, INC. (S) | 15-1-2 |
| 7 | ECO-VRINDABAN, INC. (S) | 15-1-3 |
| 8 | ECO-VRINDABAN, INC. (S) | 15-1-4 |
| 9 | ECO-VRINDABAN, INC. (S) | 15-1-4.11 |
| 10 | STATE OF W VA THE CONSERVATION COMMISSION (S) | 15-1-4.1 |
| 11 | STATE OF W VA THE CONSERVATION COMMISSION (S) | 15-1-5.1 |
| 12 | ECO-VRINDABAN, INC. (S) | 15-1-6 |
| 13 | ECO-VRINDABAN, INC. (S) | 15-1-20 |
| 14 | ISKCON NEW VRINDABAN, INC. (S) | 15-2-3 |
| 15 | CARLOS ORDONEZ (S) | 15-2-5.3 |

| ADJOINING OWNERS TABLE | | | ADJOINING OWNERS TABLE | | |
|------------------------|---|------------|------------------------|--|------------|
| TRACT | SURFACE OWNER | TAX PARCEL | TRACT | SURFACE OWNER | TAX PARCEL |
| A | BETTY JANE SCHAFER | 12-9-22.1 | FF | BRENDA J. HARRIS; DEBORAH S. WHITLATCH; JAMES W. PLANTS; AND PLANTS FAMILY IRREVOCABLE TRUST, DATED OCTOBER 2, 2008 | 13-9-18 |
| B | BETTY JANE SCHAFER | 12-9-23 | GG | MELINDA DAWN WISELKA | 15-1-4.3 |
| C | BETTY JANE SCHAFER | 12-9-24 | HH | TINA HERCULES | 15-1-4.2 |
| D | MILDRED LOUISE BLACK | 13-8-2.1 | II | JOHN T. LYNKEY | 13-9-17 |
| E | JOHN ALVIN GRAY | 13-3-14 | JJ | JOHN T. LYNKEY, ET UX | 13-9-16.1 |
| F | JOHN ALVIN GRAY | 13-3-13 | KK | ECO-VRINDABAN, INC. | 13-9A-29 |
| G | CHARLES B. FISHER & CARLA S. FISHER | 12-9-20 | LL | PHILIP C. WILSON & NANCY L. WILSON | 15-1-4.13 |
| H | CONSOLIDATION COAL COMPANY/MURRAY ENERGY | 12-9-22.2 | MM | PHILIP C. WILSON & NANCY L. WILSON | 15-1-4.6 |
| I | CALVIN C. MERINAR | 12-9-19 | NN | PHILIP C. WILSON & NANCY L. WILSON | 15-1-4.4 |
| J | CALVIN C. MERINAR | 12-10-7 | OO | PHILIP C. WILSON & NANCY L. WILSON | 15-1-4.7 |
| K | KENNETH L. MERINAR ET AL | 12-10-9 | PP | CHARLOTTE RAE WILSON CHANEY; DAVID MATTHEW DAWSON; REBECCA SUE WILSON WALTERS; AND PHILIP CHARLES WILSON | 12-10-4.2 |
| L | DOUGLAS FINTEL | 15-1-2.1 | QQ | PHILIP C. WILSON AND NANCY L. WILSON, HIS WIFE, AS JOINT TENANTS WITH RIGHT OF SURVIVORSHIP AND NOT AS TENANTS IN COMMON | 12-10-4.3 |
| M | DEBRA RAE BAUER AND WILLIAM E. WHITE, HER HUSBAND, AS JOINT TENANTS WITH THE RIGHT OF SURVIVORSHIP | 15-1-2.2 | RR | CHARLOTTE CHANEY; DAVID MATTHEW DAWSON; REBECCA WALTERS; AND PHILIP C. WILSON | 12-10-4.1 |
| N | PURE GHEE, INC. | 15-1-4.15 | SS | ROBERT P. HICKS & JANICE A. HICKS | 12-10-5 |
| O | ECO-VRINDABAN, INC. | 15-1-4.10 | TT | CHARLOTTE RAE WILSON CHANEY; DAVID MATTHEW DAWSON; REBECCA SUE WILSON WALTERS; AND PHILIP CHARLES WILSON | 12-10-6 |
| P | PHILLIP E. NEWBERRY | 15-1-4.16 | UU | PHILIP C. WILSON & NANCY L. WILSON | 12-10-4.5 |
| Q | PHILLIP E. NEWBERRY | 15-1-4.9 | VV | RUSSELL ROBERT WILSON II ET AL | 12-10-4.4 |
| R | TERRY RAY SHELDON | 15-1-4.12 | WW | BRUCE JOCHUM & SALLY JOCHUM | 13-9A-22 |
| S | GERALD H. ROBSON & THEODORA J. ROBSON | 15-1-4.8 | XX | ROBERT L. STILLWELL - LIFE | 13-9A-30 |
| T | THOMAS LORENCE & SILVIA LAU | 15-1-5 | YY | SANDRA J. ULLOM | 13-9A-20 |
| U | KENNETH L. MERINAR ET AL | 15-1-6.2 | ZZ | SANDRA J. ULLOM | 13-9A-19 |
| V | KENNETH L. MERINAR ET AL | 15-1-6.3 | AAA | JOHN E. MILLER, JR. ET UX | 13-9A-16 |
| W | TATIA JOSEPHINE ROSE | 15-1-19 | BBB | EDWARD PAUL JUREK, JR. & TAMELA S. JUREK | 13-9A-15 |
| X | SHAM SHADEEN GAFFOOR AND VIDYA RAMKAREE, HUSBAND AND WIFE, AS JOINT TENANTS WITH THE RIGHT OF SURVIVORSHIP AND NOT AS TENANTS IN COMMON | 15-2-3.8 | CCC | MEADOW LAKE CLUB CO. | 12-10-2 |
| Y | DIAN F. ALPERT | 15-2-5.1 | DDD | MEADOW LAKE CLUB CO. | 12-10-3 |
| Z | RAMESH PATEL & VINA PATEL | 15-2-5.7 | EEE | CONSOLIDATION COAL COMPANY LLC, A DELAWARE CORPORATION | 12-10-1.3 |
| AA | ISKCON NEW VRINDABAN, INC. | 15-2-5 | FFF | CONSOLIDATION COAL COMPANY/MURRAY ENERGY | 13-8-3.2 |
| BB | GIRIDHARI D. WEBER | 15-2-5.5 | GGG | LUCILLE M. HOGG - LIFE ESTATE | 13-8-3 |
| CC | ISKCON NEW VRINDABAN, INC. | 15-2-2 | HHH | LUCILLE M. HOGG - LIFE ESTATE | 13-8-4 |
| DD | BRENDA J. HARRIS; DEBORAH S. WHITLATCH; JAMES W. PLANTS; AND PLANTS FAMILY IRREVOCABLE TRUST, DATED OCTOBER 2, 2008 | 15-1-21 | III | ROBERT D. VINCILIONE ET UX | 15-1-4.14 |
| EE | BRENDA J. HARRIS; DEBORAH S. WHITLATCH; JAMES W. PLANTS; AND PLANTS FAMILY IRREVOCABLE TRUST, DATED OCTOBER 2, 2008 | 15-1-22 | | | |

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| SURFACE HOLE LOCATION (SHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,814.676 EASTING: 531,106.878 |
| LANDING POINT LOCATION (LPL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,426,692.354 EASTING: 531,355.708 |
| AZIMUTH LOCATION 1(AZL-1): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,424,792.854 EASTING: 532,071.027 |
| AZIMUTH LOCATION 2 (AZL-2) UTM (NAD83, ZONE 17, METERS): NORTHING: 4,424,627.653 EASTING: 532,154.179 |

| |
|--|
| AZIMUTH LOCATION 3 (AZL-3) UTM (NAD83, ZONE 17, METERS): NORTHING: 4,423,475.229 EASTING: 532,896.866 |
| AZIMUTH LOCATION 4 (AZL-4) UTM (NAD83, ZONE 17, METERS): NORTHING: 4,423,420.526 EASTING: 532,929.357 |
| BOTTOM HOLE LOCATION (BHL): UTM (NAD83, ZONE 17, METERS): NORTHING: 4,422,873.141 EASTING: 533,228.080 |

| | | | | |
|------------|------------|---|--------------|----------------------|
| REVISIONS: | COMPANY: |   | | 11/12/2021 |
| | OPERATOR'S | BETTY SCHAFER MSH | API # | DATE: 10-14-2020 |
| | WELL #: | 8H | 47-051-02297 | DRAWN BY: N. MANO |
| | DISTRICT: | SAND HILL | COUNTY: | SCALE: N/A |
| | | | STATE: | DRAWING NO: |
| | | | WV | WELL LOCATION PLAT 2 |