

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

API 47 - 103 - 02887 County Wetzel District Grant
Quad Pine Grove 7.5' Pad Name Long Field/Pool Name Wileyville
Farm name Francis D. & Freeda M. Brown Well Number 408 S-1H
Operator (as registered with the OOG) Ascent Resources - Marcellus, LLC
Address PO Box 13678 City Oklahoma City State OK Zip 73116

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,381,537 Easting 527,801
Landing Point of Curve Northing 4,381,367.3 Easting 527,935.6
Bottom Hole Northing 4,380,412 Easting 529,328

Elevation (ft) 1340' 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)
Synthetic Oil Based Mud

Date permit issued 07/02/2013 Date drilling commenced 9/10/2013 Date drilling ceased 4/06/2014
Date completion activities began 09/15/2014 Date completion activities ceased 10/04/2014
Verbal plugging (Y/N) N/A Date permission granted _____ Granted by _____

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

Freshwater depth(s) ft 470' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 2000' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 1180' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

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JUL 05 2016
JUL 10 2016

Reviewed by: _____

APPROVED

NAME: Jackie Hunter
DATE: 7/5/2016

07/08/2016

API 47-103-02887 Farm name Francis D. & Freeda M. Brown Well number 408 S-1H

| 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 | 20" | 20" | 100' | New | H40/94 | n/a | No cement - drilled in |
| Surface | 17-1/2" | 13-3/8" | 1286' | New | J-55/54.5 | n/a | Cement to Surface |
| Coal | | | | | | | |
| Intermediate 1 | 12-1/4" | 9-5/8" | 3427' | New | J-55/40 | n/a | Cement to Surface |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 8-1/2" | 5-1/2" | 13230' | New | P110/20 | n/a | Cement to Surface |
| Tubing | | | | | | | |
| 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 | Drilled in | | | | | | |
| Surface | Class A | 238 lead/832 tail | 14.6/15.6 | 1.37/1.18 | 995 | Surface | 12 |
| Coal | | | | | | | |
| Intermediate 1 | Type 1+ | 363 lead/726 tail | 15.0 | 1.29/1.3 | 1406 | Surface | 12 |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 50/50 PNE1/ASC | 1371 lead/1063 tail | 14.3/14.7 | 1.23/1.5 | 3324 | Surface | 12 |
| Tubing | | | | | | | |

Drillers TD (ft) 13,268' Loggers TD (ft) 13,268'
 Deepest formation penetrated Marcellus Plug back to (ft) n/a
 Plug back procedure n/a

Kick off depth (ft) 6,350' MD

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 - Ran 19 (1 every 2 joints)
Intermediate - Ran 20 (1 every 4 joints)
Productions - Ran 100 (1 every 3 joints)

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 _____

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API 47-103 - 02887 Farm name Francis D. & Freeda M. Brown Well number 408 S-1H

PERFORATION RECORD

| Stage No. | Perforation date | Perforated from MD ft. | Perforated to MD ft. | Number of Perforations | Formation(s) |
|-----------|------------------|------------------------|----------------------|------------------------|--------------|
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| | | Please see | attached. | | |

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

| Stage No. | Stimulations 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 (units) |
|-----------|-------------------|---------------------|------------------------------|------------------------------|------------|--------------------------|------------------------|----------------------------------|
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| | | | Please see | attached. | | | | |

Please insert additional pages as applicable.

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API 47- 103 . 02887 Farm name Francis D. & Freeda M. Brown Well number 408 S-1H

| PRODUCING FORMATION(S) | DEPTHS | | |
|------------------------|--------|-----|------------|
| Marcellus | 7,338' | TVD | 13,243' MD |
| | | | |
| | | | |

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 24 hrs

OPEN FLOW Gas 2429.47 mcfpd Oil 0.249 bpd NGL _____ bpd Water 7.06 bpd
 GAS MEASURED BY Estimated Orifice Pilot

| LITHOLOGY/FORMATION | TOP DEPTH IN FT | BOTTOM DEPTH IN FT | TOP DEPTH IN FT | BOTTOM DEPTH IN FT | DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC) |
|---------------------|-----------------|--------------------|-----------------|--------------------|---|
| | NAME TVD | TVD | MD | MD | |
| Sand/Shale | 0 | 2305' | 0 | 2305' | |
| Big Lime | 2305' | 2392' | 2305' | 2392' | |
| Big Injun | 2392' | 2590' | 2392' | 2590' | |
| Shale | 2590' | 3160' | 2590' | 3160' | |
| Gordon Sand | 3160' | 3204' | 3160' | 3204' | |
| Dev Shale | 3204' | 7193' | 3204' | 8444' | |
| Tully Lime | 7158' | | 7320' | | |
| Marcellus Shale | 7262' | | 7580' | 13268' | |
| | | | | | |
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Please insert additional pages as applicable.


Drilling Contractor HAD Drilling Contractors
 Address 9797 Benner Rd City Rittman State OH Zip 44270

Logging Company ALS Empirca Surface Logging
 Address 6360 W. Sam Houston Pkwy N, Suite 100 City Houston State TX Zip 77401

Cementing Company Baker Hughes
 Address PO Box 301057 City Dallas State TX Zip 75303-1057

Stimulating Company Producers Service Company
 Address PO Box 2277 City Zanesville State OH Zip 43702-2277

Please insert additional pages as applicable.

Completed by Ariel Bravo Telephone 405-252-7642
 Signature  Title Regulatory Analyst Date 2/22/2016

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 JUL 05 2016

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

07/08/2016

| Well Name | API | Property Number | Well Status | State | County | Well Spud Date | RR Date | Comp Date |
|---------------|----------------|---------------------------|-------------------|-------------------|------------|------------------|------------------------|------------|
| LONG 408 S-1H | 47103028870000 | 1470001 | PRODUCTION | WEST VIRGINIA | WETZEL | 3/19/2014 | 4/9/2014 | 10/29/2014 |
| Stage # | Start Date | Slurry Rate Avg (bbl/min) | P Treat Avg (psi) | P Breakdown (psi) | ISIP (psi) | Prop Placed (lb) | Vol Slurry Total (bbl) | |
| 1 | 9/15/2014 | 50 | 8,405 | 8,453 | 5,602 | 1,000 | 0.00 | |
| 2 | 9/15/2014 | 77 | 7,175 | 5,215 | 4,286 | 225,200 | 0.00 | |
| 3 | 9/16/2014 | 80 | 7,365 | 5,895 | 4,093 | 225,400 | 0.00 | |
| 4 | 9/16/2014 | 80 | 7,115 | 6,841 | 4,399 | 225,400 | 0.00 | |
| 5 | 9/17/2014 | 78 | 7,157 | 5,730 | 4,712 | 225,400 | 0.00 | |
| 6 | 9/17/2014 | 75 | 7,235 | 5,701 | 4,524 | 225,400 | 0.00 | |
| 7 | 9/18/2014 | 75 | 7,157 | 5,957 | 4,211 | 225,400 | 0.00 | |
| 8 | 9/18/2014 | 80 | 7,121 | 5,420 | 4,430 | 225,400 | 0.00 | |
| 9 | 9/19/2014 | 80 | 6,989 | 5,690 | 4,838 | 225,400 | 0.00 | |
| 10 | 9/19/2014 | 80 | 7,135 | 5,761 | 4,278 | 225,400 | 0.00 | |
| 11 | 9/22/2014 | 80 | 7,143 | 5,702 | 4,320 | 225,400 | 0.00 | |
| 12 | 9/22/2014 | 82 | 6,935 | 5,575 | 4,480 | 225,400 | 0.00 | |
| 13 | 9/23/2014 | 79 | 7,105 | 5,561 | 4,961 | 225,400 | 0.00 | |
| 14 | 9/23/2014 | 78 | 7,023 | 5,569 | 4,973 | 225,400 | 0.00 | |
| 15 | 9/24/2014 | 79 | 7,169 | 5,601 | 4,989 | 225,400 | 0.00 | |
| 16 | 9/24/2014 | 80 | 7,198 | 5,589 | 4,577 | 225,400 | 0.00 | |
| 17 | 9/25/2014 | 80 | 7,457 | 5,650 | 4,017 | 225,400 | 0.00 | |
| 18 | 9/25/2014 | 79 | 7,311 | 5,892 | 4,322 | 225,400 | 0.00 | |
| 19 | 9/25/2014 | 80 | 7,220 | 5,357 | 4,250 | 225,400 | 0.00 | |
| 20 | 9/26/2014 | 82 | 6,985 | 5,798 | 4,425 | 225,400 | 0.00 | |
| 21 | 9/26/2014 | 81 | 7,155 | 6,050 | 4,233 | 225,400 | 0.00 | |
| 22 | 9/26/2014 | 80 | 7,018 | 5,597 | 4,592 | 225,400 | 0.00 | |
| 23 | 9/29/2014 | 80 | 7,117 | 5,668 | 4,400 | 225,400 | 0.00 | |
| 24 | 9/29/2014 | 80 | 7,122 | 5,695 | 5,140 | 225,400 | 0.00 | |
| 25 | 9/29/2014 | 77 | 6,725 | 5,735 | 4,937 | 225,400 | 0.00 | |
| 26 | 9/30/2014 | 80 | 6,925 | 5,766 | 5,018 | 225,400 | 0.00 | |
| 27 | 9/30/2014 | 80 | 6,915 | 6,054 | 4,807 | 225,400 | 0.00 | |
| 28 | 9/30/2014 | 80 | 6,905 | 5,721 | 4,923 | 225,400 | 0.00 | |
| 29 | 10/1/2014 | 80 | 6,897 | 5,641 | 4,869 | 225,400 | 0.00 | |
| 30 | 10/1/2014 | 80 | 7,035 | 6,015 | 4,816 | 225,400 | 0.00 | |
| 31 | 10/1/2014 | 79 | 6,737 | 5,574 | 5,062 | 205,900 | 0.00 | |
| 32 | 10/2/2014 | 76 | 7,050 | 6,189 | 4,495 | 225,400 | 0.00 | |
| 33 | 10/2/2014 | 80 | 6,678 | 6,089 | 4,397 | 225,400 | 0.00 | |
| 34 | 10/2/2014 | 78 | 6,815 | 6,150 | 5,318 | 225,400 | 0.00 | |
| 35 | 10/3/2014 | 80 | 6,815 | 5,946 | 5,054 | 225,400 | 0.00 | |
| 36 | 10/3/2014 | 80 | 6,812 | 6,202 | 4,562 | 225,400 | 0.00 | |
| 37 | 10/3/2014 | 80 | 7,005 | 6,275 | 4,293 | 225,400 | 0.00 | |
| 38 | 10/4/2014 | 75 | 7,550 | 7,301 | 4,348 | 223,900 | 0.00 | |

Well Treatment Summary

Received
Office of Oil & Gas
JUL 30 2016
JUL 05 2016

Perforations

| Stage # | Date | Top (ftKB) | Btm (ftKB) | Shot Dens (shots/ft) | Entered Shot Total | Com |
|---------|-----------|------------|------------|----------------------|--------------------|--------|
| 38 | 10/3/2014 | 7,645.0 | 7,647.0 | 5.0 | 10 | Stg 38 |
| 38 | 10/3/2014 | 7,675.0 | 7,677.0 | 5.0 | 10 | Stg 38 |
| 38 | 10/3/2014 | 7,705.0 | 7,707.0 | 5.0 | 10 | Stg 38 |
| 38 | 10/3/2014 | 7,735.0 | 7,737.0 | 5.0 | 10 | Stg 38 |
| 38 | 10/3/2014 | 7,765.0 | 7,767.0 | 5.0 | 10 | Stg 38 |
| 37 | 10/3/2014 | 7,795.0 | 7,797.0 | 5.0 | 10 | Stg 37 |
| 37 | 10/3/2014 | 7,825.0 | 7,827.0 | 5.0 | 10 | Stg 37 |
| 37 | 10/3/2014 | 7,855.0 | 7,857.0 | 5.0 | 10 | Stg 37 |
| 37 | 10/3/2014 | 7,885.0 | 7,887.0 | 5.0 | 10 | Stg 37 |
| 37 | 10/3/2014 | 7,915.0 | 7,917.0 | 5.0 | 10 | Stg 37 |
| 36 | 10/3/2014 | 7,945.0 | 7,947.0 | 5.0 | 10 | Stg 36 |
| 36 | 10/3/2014 | 7,975.0 | 7,977.0 | 5.0 | 10 | Stg 36 |
| 36 | 10/3/2014 | 8,005.0 | 8,007.0 | 5.0 | 10 | Stg 36 |
| 36 | 10/3/2014 | 8,035.0 | 8,037.0 | 5.0 | 10 | Stg 36 |
| 36 | 10/3/2014 | 8,065.0 | 8,067.0 | 5.0 | 10 | Stg 36 |
| 35 | 10/2/2014 | 8,095.0 | 8,097.0 | 5.0 | 10 | Stg 35 |
| 35 | 10/2/2014 | 8,125.0 | 8,127.0 | 5.0 | 10 | Stg 35 |
| 35 | 10/2/2014 | 8,155.0 | 8,157.0 | 5.0 | 10 | Stg 35 |
| 35 | 10/2/2014 | 8,185.0 | 8,187.0 | 5.0 | 10 | Stg 35 |
| 35 | 10/2/2014 | 8,215.0 | 8,217.0 | 5.0 | 10 | Stg 35 |
| 34 | 10/2/2014 | 8,245.0 | 8,247.0 | 5.0 | 10 | Stg 34 |
| 34 | 10/2/2014 | 8,275.0 | 8,277.0 | 5.0 | 10 | Stg 34 |
| 34 | 10/2/2014 | 8,305.0 | 8,307.0 | 5.0 | 10 | Stg 34 |
| 34 | 10/2/2014 | 8,335.0 | 8,337.0 | 5.0 | 10 | Stg 34 |
| 34 | 10/2/2014 | 8,365.0 | 8,367.0 | 5.0 | 10 | Stg 34 |
| 33 | 10/2/2014 | 8,395.0 | 8,397.0 | 5.0 | 10 | Stg 33 |
| 33 | 10/2/2014 | 8,425.0 | 8,427.0 | 5.0 | 10 | Stg 33 |
| 33 | 10/2/2014 | 8,455.0 | 8,457.0 | 5.0 | 10 | Stg 33 |
| 33 | 10/2/2014 | 8,485.0 | 8,487.0 | 5.0 | 10 | Stg 33 |
| 33 | 10/2/2014 | 8,515.0 | 8,517.0 | 5.0 | 10 | Stg 33 |
| 32 | 10/1/2014 | 8,545.0 | 8,547.0 | 5.0 | 10 | Stg 32 |
| 32 | 10/1/2014 | 8,575.0 | 8,577.0 | 5.0 | 10 | Stg 32 |
| 32 | 10/1/2014 | 8,605.0 | 8,607.0 | 5.0 | 10 | Stg 32 |
| 32 | 10/1/2014 | 8,635.0 | 8,637.0 | 5.0 | 10 | Stg 32 |
| 32 | 10/1/2014 | 8,665.0 | 8,667.0 | 5.0 | 10 | Stg 32 |
| 31 | 10/1/2014 | 8,695.0 | 8,697.0 | 5.0 | 10 | Stg 31 |
| 31 | 10/1/2014 | 8,725.0 | 8,727.0 | 5.0 | 10 | Stg 31 |
| 31 | 10/1/2014 | 8,755.0 | 8,757.0 | 5.0 | 10 | Stg 31 |
| 31 | 10/1/2014 | 8,785.0 | 8,787.0 | 5.0 | 10 | Stg 31 |
| 31 | 10/1/2014 | 8,815.0 | 8,817.0 | 5.0 | 10 | Stg 31 |
| 30 | 10/1/2014 | 8,845.0 | 8,847.0 | 5.0 | 10 | Stg 30 |
| 30 | 10/1/2014 | 8,875.0 | 8,877.0 | 5.0 | 10 | Stg 30 |
| 30 | 10/1/2014 | 8,905.0 | 8,907.0 | 5.0 | 10 | Stg 30 |
| 30 | 10/1/2014 | 8,935.0 | 8,937.0 | 5.0 | 10 | Stg 30 |
| 30 | 10/1/2014 | 8,965.0 | 8,967.0 | 5.0 | 10 | Stg 30 |
| 29 | 9/30/2014 | 8,995.0 | 8,997.0 | 5.0 | 10 | Stg 29 |
| 29 | 9/30/2014 | 9,025.0 | 9,027.0 | 5.0 | 10 | Stg 29 |
| 29 | 9/30/2014 | 9,055.0 | 9,057.0 | 5.0 | 10 | Stg 29 |
| 29 | 9/30/2014 | 9,085.0 | 9,087.0 | 5.0 | 10 | Stg 29 |
| 29 | 9/30/2014 | 9,115.0 | 9,117.0 | 5.0 | 10 | Stg 29 |
| 28 | 9/30/2014 | 9,145.0 | 9,147.0 | 5.0 | 10 | Stg 28 |
| 28 | 9/30/2014 | 9,175.0 | 9,177.0 | 5.0 | 10 | Stg 28 |
| 28 | 9/30/2014 | 9,205.0 | 9,207.0 | 5.0 | 10 | Stg 28 |
| 28 | 9/30/2014 | 9,235.0 | 9,237.0 | 5.0 | 10 | Stg 28 |
| 28 | 9/30/2014 | 9,265.0 | 9,267.0 | 5.0 | 10 | Stg 28 |
| 27 | 9/30/2014 | 9,295.0 | 9,297.0 | 5.0 | 10 | Stg 27 |
| 27 | 9/30/2014 | 9,325.0 | 9,327.0 | 5.0 | 10 | Stg 27 |
| 27 | 9/30/2014 | 9,355.0 | 9,357.0 | 5.0 | 10 | Stg 27 |
| 27 | 9/30/2014 | 9,385.0 | 9,387.0 | 5.0 | 10 | Stg 27 |
| 27 | 9/30/2014 | 9,415.0 | 9,417.0 | 5.0 | 10 | Stg 27 |
| 26 | 9/29/2014 | 9,445.0 | 9,447.0 | 5.0 | 10 | Stg 26 |
| 26 | 9/29/2014 | 9,475.0 | 9,477.0 | 5.0 | 10 | Stg 26 |
| 26 | 9/29/2014 | 9,505.0 | 9,507.0 | 5.0 | 10 | Stg 26 |

Approved
Office of Oil & Gas
July 15, 2016

Perforations

| Stage # | Date | Top (ftKB) | Btm (ftKB) | Shot Dens (shots/ft) | Entered Shot Total | Com |
|---------|-----------|------------|------------|----------------------|--------------------|--------|
| 26 | 9/29/2014 | 9,535.0 | 9,537.0 | 5.0 | 10 | Stg 26 |
| 26 | 9/29/2014 | 9,565.0 | 9,567.0 | 5.0 | 10 | Stg 26 |
| 25 | 9/29/2014 | 9,595.0 | 9,597.0 | 5.0 | 10 | Stg 25 |
| 25 | 9/29/2014 | 9,625.0 | 9,627.0 | 5.0 | 10 | Stg 25 |
| 25 | 9/29/2014 | 9,655.0 | 9,657.0 | 5.0 | 10 | Stg 25 |
| 25 | 9/29/2014 | 9,685.0 | 9,687.0 | 5.0 | 10 | Stg 25 |
| 25 | 9/29/2014 | 9,715.0 | 9,717.0 | 5.0 | 10 | Stg 25 |
| 24 | 9/29/2014 | 9,745.0 | 9,747.0 | 5.0 | 10 | Stg 24 |
| 24 | 9/29/2014 | 9,775.0 | 9,777.0 | 5.0 | 10 | Stg 24 |
| 24 | 9/29/2014 | 9,805.0 | 9,807.0 | 5.0 | 10 | Stg 24 |
| 24 | 9/29/2014 | 9,835.0 | 9,837.0 | 5.0 | 10 | Stg 24 |
| 24 | 9/29/2014 | 9,865.0 | 9,867.0 | 5.0 | 10 | Stg 24 |
| 23 | 9/26/2014 | 9,895.0 | 9,897.0 | 5.0 | 10 | Stg 23 |
| 23 | 9/26/2014 | 9,925.0 | 9,927.0 | 5.0 | 10 | Stg 23 |
| 23 | 9/26/2014 | 9,955.0 | 9,957.0 | 5.0 | 10 | Stg 23 |
| 23 | 9/26/2014 | 9,985.0 | 9,987.0 | 5.0 | 10 | Stg 23 |
| 23 | 9/26/2014 | 10,015.0 | 10,017.0 | 5.0 | 10 | Stg 23 |
| 22 | 9/26/2014 | 10,045.0 | 10,047.0 | 5.0 | 10 | Stg 22 |
| 22 | 9/26/2014 | 10,075.0 | 10,077.0 | 5.0 | 10 | Stg 22 |
| 22 | 9/26/2014 | 10,105.0 | 10,107.0 | 5.0 | 10 | Stg 22 |
| 22 | 9/26/2014 | 10,135.0 | 10,137.0 | 5.0 | 10 | Stg 22 |
| 22 | 9/26/2014 | 10,165.0 | 10,167.0 | 5.0 | 10 | Stg 22 |
| 21 | 9/26/2014 | 10,195.0 | 10,197.0 | 5.0 | 10 | Stg 21 |
| 21 | 9/26/2014 | 10,225.0 | 10,227.0 | 5.0 | 10 | Stg 21 |
| 21 | 9/26/2014 | 10,255.0 | 10,257.0 | 5.0 | 10 | Stg 21 |
| 21 | 9/26/2014 | 10,285.0 | 10,287.0 | 5.0 | 10 | Stg 21 |
| 21 | 9/26/2014 | 10,315.0 | 10,317.0 | 5.0 | 10 | Stg 21 |
| 20 | 9/25/2014 | 10,345.0 | 10,347.0 | 5.0 | 10 | Stg 20 |
| 20 | 9/25/2014 | 10,375.0 | 10,377.0 | 5.0 | 10 | Stg 20 |
| 20 | 9/25/2014 | 10,405.0 | 10,407.0 | 5.0 | 10 | Stg 20 |
| 20 | 9/25/2014 | 10,435.0 | 10,437.0 | 5.0 | 10 | Stg 20 |
| 20 | 9/25/2014 | 10,465.0 | 10,467.0 | 5.0 | 10 | Stg 20 |
| 19 | 9/25/2014 | 10,495.0 | 10,497.0 | 5.0 | 10 | Stg 19 |
| 19 | 9/25/2014 | 10,525.0 | 10,527.0 | 5.0 | 10 | Stg 19 |
| 19 | 9/25/2014 | 10,555.0 | 10,557.0 | 5.0 | 10 | Stg 19 |
| 19 | 9/25/2014 | 10,585.0 | 10,587.0 | 5.0 | 10 | Stg 19 |
| 19 | 9/25/2014 | 10,615.0 | 10,617.0 | 5.0 | 10 | Stg 19 |
| 18 | 9/25/2014 | 10,645.0 | 10,647.0 | 5.0 | 10 | Stg 18 |
| 18 | 9/25/2014 | 10,675.0 | 10,677.0 | 5.0 | 10 | Stg 18 |
| 18 | 9/25/2014 | 10,705.0 | 10,707.0 | 5.0 | 10 | Stg 18 |
| 18 | 9/25/2014 | 10,735.0 | 10,737.0 | 5.0 | 10 | Stg 18 |
| 18 | 9/25/2014 | 10,765.0 | 10,767.0 | 5.0 | 10 | Stg 18 |
| 17 | 9/24/2014 | 10,795.0 | 10,797.0 | 5.0 | 10 | Stg 17 |
| 17 | 9/24/2014 | 10,825.0 | 10,827.0 | 5.0 | 10 | Stg 17 |
| 17 | 9/24/2014 | 10,855.0 | 10,857.0 | 5.0 | 10 | Stg 17 |
| 17 | 9/24/2014 | 10,885.0 | 10,887.0 | 5.0 | 10 | Stg 17 |
| 17 | 9/24/2014 | 10,915.0 | 10,917.0 | 5.0 | 10 | Stg 17 |
| 16 | 9/24/2014 | 10,945.0 | 10,947.0 | 5.0 | 10 | Stg 16 |
| 16 | 9/24/2014 | 10,975.0 | 10,977.0 | 5.0 | 10 | Stg 16 |
| 16 | 9/24/2014 | 11,005.0 | 11,007.0 | 5.0 | 10 | Stg 16 |
| 16 | 9/24/2014 | 11,035.0 | 11,037.0 | 5.0 | 10 | Stg 16 |
| 16 | 9/24/2014 | 11,065.0 | 11,067.0 | 5.0 | 10 | Stg 16 |
| 15 | 9/23/2014 | 11,095.0 | 11,097.0 | 5.0 | 10 | Stg 15 |
| 15 | 9/23/2014 | 11,125.0 | 11,127.0 | 5.0 | 10 | Stg 15 |
| 15 | 9/23/2014 | 11,155.0 | 11,157.0 | 5.0 | 10 | Stg 15 |
| 15 | 9/23/2014 | 11,185.0 | 11,187.0 | 5.0 | 10 | Stg 15 |
| 15 | 9/23/2014 | 11,215.0 | 11,217.0 | 5.0 | 10 | Stg 15 |
| 14 | 9/23/2014 | 11,245.0 | 11,247.0 | 5.0 | 10 | Stg 14 |
| 14 | 9/23/2014 | 11,275.0 | 11,277.0 | 5.0 | 10 | Stg 14 |
| 14 | 9/23/2014 | 11,305.0 | 11,307.0 | 5.0 | 10 | Stg 14 |
| 14 | 9/23/2014 | 11,335.0 | 11,337.0 | 5.0 | 10 | Stg 14 |
| 14 | 9/23/2014 | 11,365.0 | 11,367.0 | 5.0 | 10 | Stg 14 |
| 13 | 9/22/2014 | 11,395.0 | 11,397.0 | 5.0 | 10 | Stg 13 |

Received
Office of Oil & Gas
July 9 2016

07/08/2016

Perforations

| Stage # | Date | Top (ftKB) | Btm (ftKB) | Shot Dens (shots/ft) | Entered Shot Total | Com |
|---------|-----------|------------|------------|----------------------|--------------------|---|
| 13 | 9/22/2014 | 11,425.0 | 11,427.0 | 5.0 | 10 | Stg 13 |
| 13 | 9/22/2014 | 11,455.0 | 11,457.0 | 5.0 | 10 | Stg 13 |
| 13 | 9/22/2014 | 11,485.0 | 11,487.0 | 5.0 | 10 | Stg 13 |
| 13 | 9/22/2014 | 11,515.0 | 11,517.0 | 5.0 | 10 | Stg 13 |
| 12 | 9/22/2014 | 11,545.0 | 11,547.0 | 5.0 | 10 | Stg 12 |
| 12 | 9/22/2014 | 11,575.0 | 11,577.0 | 5.0 | 10 | Stg 12 |
| 12 | 9/22/2014 | 11,605.0 | 11,607.0 | 5.0 | 10 | Stg 12 |
| 12 | 9/22/2014 | 11,635.0 | 11,637.0 | 5.0 | 10 | Stg 12 |
| 12 | 9/22/2014 | 11,665.0 | 11,667.0 | 5.0 | 10 | Stg 12 |
| 11 | 9/19/2014 | 11,695.0 | 11,697.0 | 5.0 | 10 | Stg 11 |
| 11 | 9/19/2014 | 11,725.0 | 11,727.0 | 5.0 | 10 | Stg 11 |
| 11 | 9/19/2014 | 11,755.0 | 11,757.0 | 5.0 | 10 | Stg 11 |
| 11 | 9/19/2014 | 11,785.0 | 11,787.0 | 5.0 | 10 | Stg 11 |
| 11 | 9/19/2014 | 11,815.0 | 11,817.0 | 5.0 | 10 | Stg 11 |
| 10 | 9/19/2014 | 11,845.0 | 11,847.0 | 5.0 | 10 | Stg 10 |
| 10 | 9/19/2014 | 11,875.0 | 11,877.0 | 5.0 | 10 | Stg 10 |
| 10 | 9/19/2014 | 11,905.0 | 11,907.0 | 5.0 | 10 | Stg 10 |
| 10 | 9/19/2014 | 11,935.0 | 11,937.0 | 5.0 | 10 | Stg 10 |
| 10 | 9/19/2014 | 11,965.0 | 11,967.0 | 5.0 | 10 | Stg 10 |
| 9 | 9/18/2014 | 11,995.0 | 11,997.0 | 5.0 | 10 | Stg 9 |
| 9 | 9/18/2014 | 12,025.0 | 12,027.0 | 5.0 | 10 | Stg 9 |
| 9 | 9/18/2014 | 12,055.0 | 12,057.0 | 5.0 | 10 | Stg 9 |
| 9 | 9/18/2014 | 12,085.0 | 12,087.0 | 5.0 | 10 | Stg 9 |
| 9 | 9/18/2014 | 12,115.0 | 12,117.0 | 5.0 | 10 | Stg 9 |
| 8 | 9/18/2014 | 12,145.0 | 12,147.0 | 5.0 | 10 | Stg 8 |
| 8 | 9/18/2014 | 12,175.0 | 12,177.0 | 5.0 | 10 | Stg 8 |
| 8 | 9/18/2014 | 12,205.0 | 12,207.0 | 5.0 | 10 | Stg 8 |
| 8 | 9/18/2014 | 12,235.0 | 12,237.0 | 5.0 | 10 | Stg 8 |
| 8 | 9/18/2014 | 12,265.0 | 12,267.0 | 5.0 | 10 | Stg 8 |
| 7 | 9/17/2014 | 12,295.0 | 12,297.0 | 5.0 | 10 | Stg 7 |
| 7 | 9/17/2014 | 12,325.0 | 12,327.0 | 5.0 | 10 | Stg 7 |
| 7 | 9/17/2014 | 12,355.0 | 12,357.0 | 5.0 | 10 | Stg 7 |
| 7 | 9/17/2014 | 12,385.0 | 12,387.0 | 5.0 | 10 | Stg 7 |
| 7 | 9/17/2014 | 12,415.0 | 12,417.0 | 5.0 | 10 | Stg 7 |
| 6 | 9/17/2014 | 12,460.0 | 12,462.0 | 5.0 | 10 | Stg 6, adjusted depth 15' due to previous cluster misfire |
| 6 | 9/17/2014 | 12,475.0 | 12,477.0 | 0.0 | 0 | Stg 6, Mis fire unable to get shot fired |
| 6 | 9/17/2014 | 12,505.0 | 12,507.0 | 5.0 | 10 | Stg 6 |
| 6 | 9/17/2014 | 12,535.0 | 12,537.0 | 5.0 | 10 | Stg 6 |
| 6 | 9/17/2014 | 12,565.0 | 12,567.0 | 5.0 | 10 | Stg 6 |
| 5 | 9/16/2014 | 12,595.0 | 12,597.0 | 5.0 | 10 | Stg 5 |
| 5 | 9/16/2014 | 12,625.0 | 12,627.0 | 5.0 | 10 | Stg 5 |
| 5 | 9/16/2014 | 12,655.0 | 12,657.0 | 5.0 | 10 | Stg 5 |
| 5 | 9/16/2014 | 12,685.0 | 12,687.0 | 5.0 | 10 | Stg 5 |
| 5 | 9/16/2014 | 12,715.0 | 12,717.0 | 5.0 | 10 | Stg 5 |
| 4 | 9/16/2014 | 12,745.0 | 12,747.0 | 5.0 | 10 | Stg 4 |
| 4 | 9/16/2014 | 12,775.0 | 12,777.0 | 5.0 | 10 | Stg 4 |
| 4 | 9/16/2014 | 12,805.0 | 12,807.0 | 5.0 | 10 | Stg 4 |
| 4 | 9/16/2014 | 12,835.0 | 12,837.0 | 5.0 | 10 | Stg 4 |
| 4 | 9/16/2014 | 12,865.0 | 12,867.0 | 5.0 | 10 | Stg 4 |
| 3 | 9/15/2014 | 12,895.0 | 12,897.0 | 5.0 | 10 | Stg 3 |
| 3 | 9/15/2014 | 12,925.0 | 12,927.0 | 5.0 | 10 | Stg 3 |
| 3 | 9/15/2014 | 12,955.0 | 12,957.0 | 5.0 | 10 | Stg 3 |
| 3 | 9/15/2014 | 12,985.0 | 12,987.0 | 5.0 | 10 | Stg 3 |
| 3 | 9/15/2014 | 13,015.0 | 13,017.0 | 5.0 | 10 | Stg 3 |
| 2 | 9/15/2014 | 13,045.0 | 13,047.0 | 5.0 | 10 | Stg 2 |
| 2 | 9/15/2014 | 13,075.0 | 13,077.0 | 5.0 | 10 | Stg 2 |
| 2 | 9/15/2014 | 13,105.0 | 13,107.0 | 5.0 | 10 | Stg 2 |
| 2 | 9/15/2014 | 13,135.0 | 13,137.0 | 5.0 | 10 | Stg 2 |
| 2 | 9/15/2014 | 13,165.0 | 13,167.0 | 5.0 | 10 | Stg 2 |

Received
Office of Oil & Gas
11/10/2016

Perforations

| Stage # | Date | Top (ftKB) | Blm (ftKB) | Shot Dens (shots/ft) | Entered Shot Total | Com |
|---------|-----------|------------|------------|----------------------|--------------------|------------------------------|
| 1 | 9/15/2014 | 13,195.0 | 13,201.0 | 2.0 | | Sig 1 SLB Rupture Disc Valve |

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JUL 30 2016
Office of Oil & Gas
JUL 05 2016

07/08/2016

(BOTTOM HOLE: 80°39'31.3")

LON: -80°40'35.2"

2755'

1 - Well face and lat/long and Longitude were measured by GPS (Sub-meter Mapping Grade) corners are not covered by UTM grid lines (Zone 17 North - NAD 1983).

2 - Surface owners and adjacent information obtained from the West Virginia Assessor's tax records.

3 - No Title Opinion is provided to the Surveyor during this survey. This survey is subject to a complete title search.

U TM Coordinates (Zone 17N NAD 1983)

Surface N=4,381,587m.
E=527,801m.

Bottom Hole N=4,380,416m.
E=528,330m.

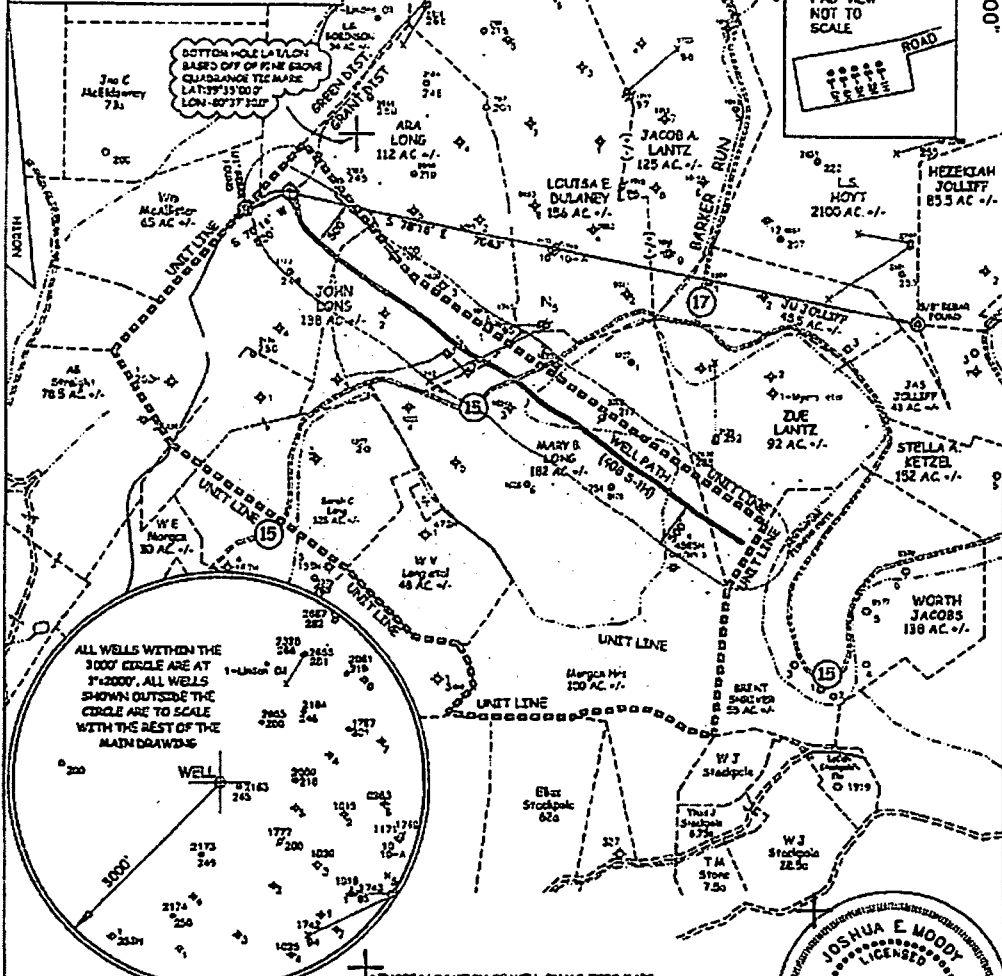
LOCATION REFERENCES

NAD 1983
N 30°17' E 124' 37" SIZE
E 80°50' E 174' 27" SIZE

LAT: 39°37'30"

MAP OF
H.G. ENERGY, LLC
-LONG 408 UNIT-

LON: 80°40'00"



JOB # 12-025
DRAWING # 12HG409FOLDER
SCALE 1" = 1500'
MINIMUM DEGREE OF ACCURACY SUB-METER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS
MOODY LAND SURVEYING, LLC
ST. MARYS, WV 26170

JOSHUA E. MOODY, P.S. 2020
DATE 12/08/14
OPERATOR'S WELL # 408 S-1H

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE: OIL GAS LIQUID INJECTION _____ WASTE DISPOSAL _____ HORIZONTAL

(IF "GAS") PRODUCTION STORAGE _____ DEEP _____ SHALLOW

LOCATION: ELEVATION 1340' WATERSHED NORTH FOR FISHING CREEK _____ API WELL # _____
DISTRICT GRANT COUNTY WETZEL STATE 103 PERMIT _____
QUADRANGLE PINE GROVE 7.5'

SURFACE OWNER FRANCIS D. & FREEDA M. BROWN (surface hole) ACREAGE 103 ACRES +/-
OIL & GAS ROYALTY OWNER ROBERT B. MYERS ET AL LEASE ACREAGE 514.72 ACRES +/-

PROPOSED WORK: DRILL CONVERT _____ DRILL DEEPER _____ REDRILL _____ FRACTURE OR
STIMULATE PLUG OFF OLD FORMATION _____ PERFORATE NEW FORMATION _____
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED LOCATION _____

PLUG & ABANDON _____ CLEAN OUT & REPLUG _____
TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD= 7,337.34' MD= 13,268'

WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT DIANE WHITE
ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

LEASE # 31950-50 et al

FORM WW-6

Received Office of Oil & Gas

JUL 05 2016

07/08/2016

(BOTTOM HOLE: 80°39'31.3")

LON: -80°40'35.2"

2755'

LON: 80°40'00"

15.132'

LAT: 39°35'00.5" (BOTTOM HOLE: 39°34'22.3")

1 - Well ties and Latitude and Longitude were measured by DGPS (Sub-meter Mapping Grade). Bearings are referenced to UTM Grid North (Zone 17 North - NAD 1927).

2 - Surface owners and adjacent information obtained from the Wetzel County Assessor's tax records.

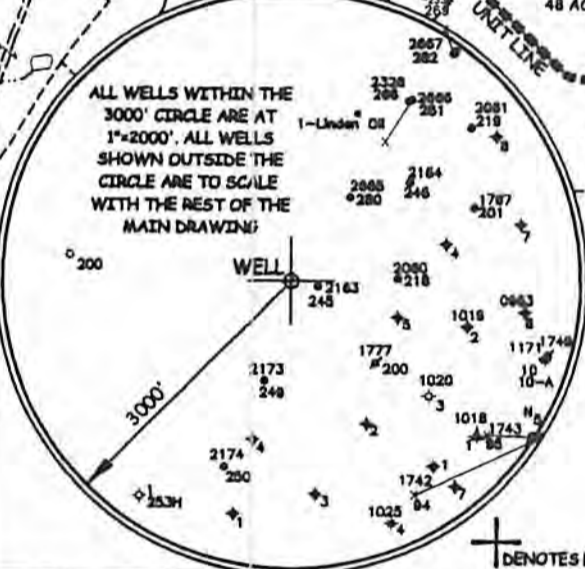
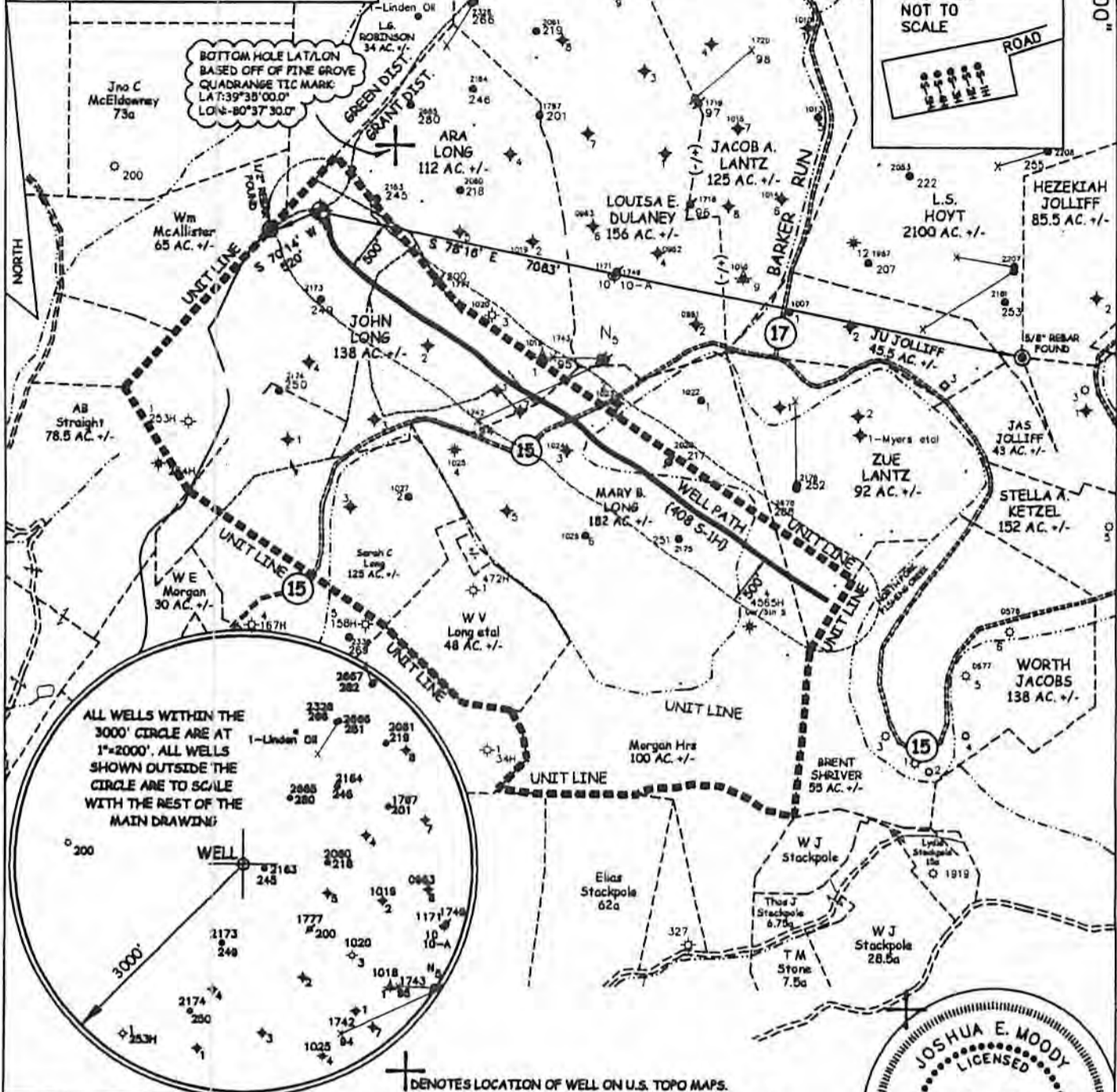
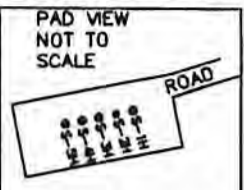
3 - No Title Opinion was provided to the Surveyor during this survey. This survey is subject to a complete Title Opinion.

| UTM Coordinates (Zone 17N-NAD 1983) | |
|--|------------------------------|
| Surface | N-4,381,587m. E-527,801m. |
| Bottom Hole | N-4,380,416m. E-529,330m. |

| LOCATION REFERENCES | |
|---------------------|--|
| NAD 1983 | N 80°13' E 234' SPIKE S 86°10' E 174' SPIKE |

LAT: 39°37'30"

MAP OF H.G. ENERGY, LLC -LONG 408 UNIT-



⊕ DENOTES LOCATION OF WELL ON U.S. TOPO MAPS.

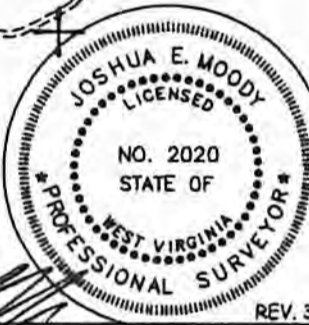
JOB # 12-025
DRAWING # 12HG4001FOLDER
SCALE 1" = 1500'
MINIMUM DEGREE OF ACCURACY SUB-METER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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



WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

MOODY LAND SURVEYING, LLC
ST. MARYS, WV 26170



JOSHUA E. MOODY, P.S. 2020
DATE 12/08/14
OPERATOR'S WELL # 408 S-1H

WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL HORIZONTAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ELEVATION 1340' WATERSHED NORTH FOR, FISHING CREEK API WELL # 47-103-0288746A
DISTRICT GRANT COUNTY WETZEL STATE COUNTY PERMIT
QUADRANGLE PINE GROVE 7.5'

SURFACE OWNER FRANCIS D. & FREEDA M. BROWN (surface hole) ACREAGE 103 ACRES +/-
OIL & GAS ROYALTY OWNER ROBERT B. MYERS ET AL LEASE ACREAGE 514.72 ACRES +/-
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED LOCATION

PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH TVD= 7,337.34' MD= 13,268'
WELL OPERATOR H.G. ENERGY, LLC DESIGNATED AGENT DIANE WHITE
ADDRESS 5260 DuPONT ROAD ADDRESS 5260 DuPONT ROAD
PARKERSBURG, WV 26101 PARKERSBURG, WV 26101

07/08/2016