

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

API 47 - 043 - 03580 County LINCOLN District DUVAL
Quad GRIFFITHSVILLE 7.5' Pad Name FOWLER, ROBERT Field/Pool Name GRIFFITHSVILLE
Farm name MCCLURE, ANDY & REBECCA Well Number 505
Operator (as registered with the OOG) H.G. ENERGY LLC
Address 5260 DuPONT ROAD City PARKERSBURG State WV Zip 26101

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4,231,555 M Easting 417,030 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 870' 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)
N/A

Date permit issued 2/13/18 Date drilling commenced 7/27/18 Date drilling ceased 7/30/18
Date completion activities began 8/10/18 Date completion activities ceased 8/14/18
Verbal plugging (Y/N) N 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 None Open mine(s) (Y/N) depths None
Salt water depth(s) ft 1070' Void(s) encountered (Y/N) depths None
Coal depth(s) ft 283'- 289' Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) N

Reviewed

J. [Signature] 10-22-18

RECEIVED
Office of Oil and Gas

Reviewed by: SEP 7 2018

WV Department of
Environmental Protection

WR-35
Rev. 8/23/13

API 47-043 - 03580 Farm name MCCLURE, ANDY & REBECCA Well number 505

| 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 | 15" | 13 3/8" | 13' | New | LS | | Sand In |
| Surface | 8 3/4" | 7" | 421.2' | New | LS | 64' | Y |
| Coal | | | | | | | |
| Intermediate 1 | | | | | | | |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 6 1/4" | 4 1/2" | 2487.6' | Used | J-55 | | Y |
| Tubing | | | | | | | |
| Packer type and depth set | | | | | | | |

Comment Details Circulated Est. 35 sks to surface on 7" surface cement job. Circulated Est. 20 sks to surface on 4 1/2" cement job.

| 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 | | | | | | | |
| Surface | Reg Neat | 120 | 15.6 | 1.18 | 154 | Surface | 8 |
| Coal | | | | | | | |
| Intermediate 1 | | | | | | | |
| Intermediate 2 | | | | | | | |
| Intermediate 3 | | | | | | | |
| Production | 50:50 Pozmix | 120/125 | 13.2/14.2 | 1.64/1.27 | 197/186 | 140' | 8 |
| Tubing | | | | | | | |

Drillers TD (ft) 2526' Loggers TD (ft) 2526'
 Deepest formation penetrated Berea Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) N/A

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 _____

12 Centralizers every 68 from bottom on 4 1/2", Centralizer placed mid string on 7"

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 _____

RECEIVED
Office of Oil and Gas

SEP 7 2018

WV Department of
Environmental Protection

WR-35
Rev. 8/23/13

API 47- 043 - 03580 Farm name MCCLURE, ANDY & REBECCA Well number 505

| <u>PRODUCING FORMATION(S)</u> | <u>DEPTHS</u> | |
|-------------------------------|---------------|--------|
| Berea | 2341'- 2363' | TVD 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 _____ hrs

OPEN FLOW Gas _____ Oil _____ NGL _____ Water _____
 _____ mcfpd _____ bpd _____ bpd _____ bpd Estimated Orifice Pilot

| LITHOLOGY/ FORMATION | TOP DEPTH IN FT NAME TVD | BOTTOM DEPTH IN FT TVD | TOP DEPTH IN FT MD | BOTTOM DEPTH IN FT MD | DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC) |
|-------------------------|--------------------------------|------------------------------|--------------------------|-----------------------------|--|
| Sand/Shale | 0 | 283 | 0 | | |
| Pittsburgh Coal | 283 | 289 | | | |
| Sand/Shale | 289 | 1626 | | | |
| Big Lime | 1626 | 1842 | | | |
| Big Injun | 1842 | 1918 | | | |
| Shale | 1918 | 2321 | | | |
| Coffee Shale | 2321 | 2341 | | | |
| Berea | 2341 | 2363 | | | |
| Shale | 2363 | 2526 | | | |
| TD | 2526 | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Please insert additional pages as applicable.

Drilling Contractor Noah Horn Well Drilling
 Address 1070 Sandy Valley Lane City Vansant State VA Zip 24656

Logging Company Weatherford International
 Address 13211 Old Hwy 50 City Flora State IL Zip 62839

Cementing Company C&J Energy Services
 Address 580 Hawthorn Dr City Norton State VA Zip 24273

Stimulating Company Producers Service Corp.
 Address 109 South Graham Street City Zanesville State OH Zip 43701

Please insert additional pages as applicable.

Completed by Roger Heldman Telephone 304-420-1107
 Signature *Roger Heldman* Title Operations Manager Date 8/22/18

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

RECEIVED
 Office of Oil and Gas
 SEP 7 2018
 WV Department of
 Environmental Protection

12/28/2018

Producers Service Corporation
109 South Graham Street
Zanesville, OH 43701
(740) 454-6253
www.producersservicecorp.com

Frac HG Energy

Company Rep: Dustin Hendershot
Treater: Daniel L Graham
8/14/2018
Well: R.Fowler#505
Lincoln County, WV

Casing

OD: 4.5"
ID: N/A
Weight: 10.5 lb.
TD: 2526 ft.

Tubing

Size: N/A
Depth: N/A

Packers

Upper Make: N/A
Upper Depth: N/A
Lower Make: N/A
Lower Depth: N/A

Pressures

PSI Test: 3636 psi
Breakdown: 2055 psi
Max: 951 psi
Average: 919 psi
Displacement: 920 psi

Volumes:

Pad 25 BBL
Treatment: 45 BBL
0.15% Acid: 250 Gal
Total: 132 BBL
Flush: 36 BBL

Open Hole

Size: N/A
From: N/A
To: N/A

Perforations

of Shots: 40
Top Perf: 2345 ft.
Bottom Perf: 2355 ft.

Rates

Average: 4 bbl/min
Max: 4 bbl/min

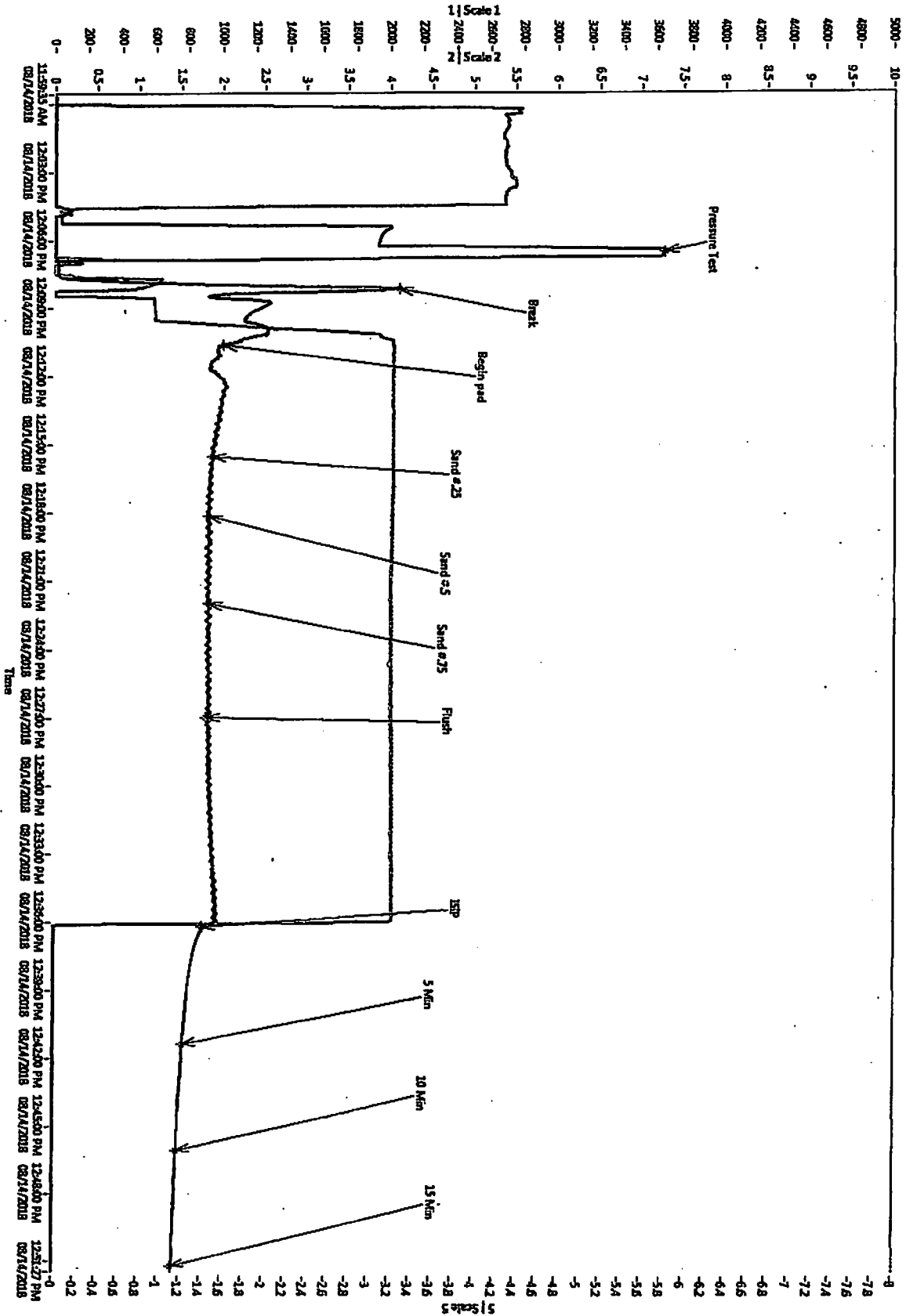
Notes:

Invoice #: 20828



12/28/2018

HG Energy R. Fowler #505 INV#20828



RECEIVED
Office of Oil and Gas
SEP 7 2018
WV Department of
Environmental Protection

HG Energy R.Fowler #505 INV#20828

| Timestamp | Annotation | Pressure 1 | Rate | Stage Total (bbl) | Grand Total (bbl) |
|-----------------------|---------------|------------|------|-------------------|-------------------|
| 8/14/2018 12:06:30 PM | Pressure Test | 3634.66 | 0.00 | 23.88 | 23.88 |
| 8/14/2018 12:06:59 PM | Break | 1224.66 | 1.18 | 1.24 | 1.24 |
| 8/14/2018 12:10:38 PM | Begin pad | 1000.76 | 4.04 | 5.32 | 5.32 |
| 8/14/2018 12:16:30 PM | Sand #.25 | 940.10 | 4.06 | 25.10 | 25.10 |
| 8/14/2018 12:18:05 PM | Sand #.5 | 916.64 | 4.00 | 10.36 | 35.52 |
| 8/14/2018 12:21:57 PM | Sand #.75 | 918.03 | 4.02 | 14.87 | 51.06 |
| 8/14/2018 12:26:57 PM | Flush | 906.52 | 4.00 | 20.00 | 71.12 |
| 8/14/2018 12:36:11 PM | ISIP | 883.56 | 0.00 | 36.42 | 107.61 |
| 8/14/2018 12:41:21 PM | 5 Min | 768.26 | 0.00 | 36.42 | 107.61 |
| 8/14/2018 12:46:03 PM | 10 Min | 733.07 | 0.00 | 36.42 | 107.61 |
| 8/14/2018 12:51:12 PM | 15 Min | 709.30 | 0.00 | 36.42 | 107.61 |

RECEIVED
Office of Oil and Gas
SEP 7 2018
WV Department of
Environmental Protection