

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

API 47-043-03578 County LINCOLN District DUVAL
Quad GRIFFITHSVILLE 7.5' Pad Name FOWLER, THOMAS Field/Pool Name GRIFFITHSVILLE
Farm name MCLURE, ANDY & REBECCA Well Number 503
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 4,231,992 M Easting 416,666 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 995' 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 2/12/18 Date drilling commenced 7/23/18 Date drilling ceased 7/27/18
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 1160', 1250' Void(s) encountered (Y/N) depths None
Coal depth(s) ft 475'- 480' Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) N

Reviewed by: _____
Reviewed
J. [Signature] 10-22-18

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API 47- 043 - 03578 Farm name MCLURE, ANDY & REBECCA Well number 503

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"	23.5'	New	LS		Sand In
Surface	8 3/4"	7"	546.95'	New	LS	64'	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2576.33'	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. 5 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	140	15.6	1.18	165	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	110'	8
Tubing							

Drillers TD (ft) 2640' Loggers TD (ft) 2641'
 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 88 from bottom on 4 1/2", Centralizer placed mid string on 7"

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____ RECEIVED Office of Oil and Gas

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____ SEP 7 2018

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____ W Department of Environmental Protection

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Berea	2460'- 2482'	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 _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY 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	475	0		
Pittsburgh Coal	475	480			
Sand/Shale	480	1744			
Big Lime	1744	1968			
Big Injun	1968	2040			
Shale	2040	2440			
Coffee Shale	2440	2460			
Berea	2460	2482			
Shale	2482	2640			
TD	2640				

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 RECEIVED
Signature *Roger Heldman* Title Operations Manager Date 8/22/18 Office of Oil and Gas

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

SEP 7 2018

12/28/2018



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

Frac HG Energy

Company Rep: Dustin Hendershot
Treater: Daniel L Graham
8/14/2018
Well: T.Fowler#503
Lincoln County, WV

Casing

OD: 4.5"
ID: N/A
Weight: 10.5 lb.
TD: 2640 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: 3017 psi
Breakdown: 2431 psi
Max: 1130 psi
Average: 951 psi
Displacement: N/A

Volumes:

Pad 25 BBL
Treatment: 45 BBL
0.15% Acid: 250 Gal
Total: 133 BBL
Flush: 38 BBL

Open Hole

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

Perforations

of Shots: 40
Top Perf: 2465 ft.
Bottom Perf: 2475 ft.

Rates

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

Notes:

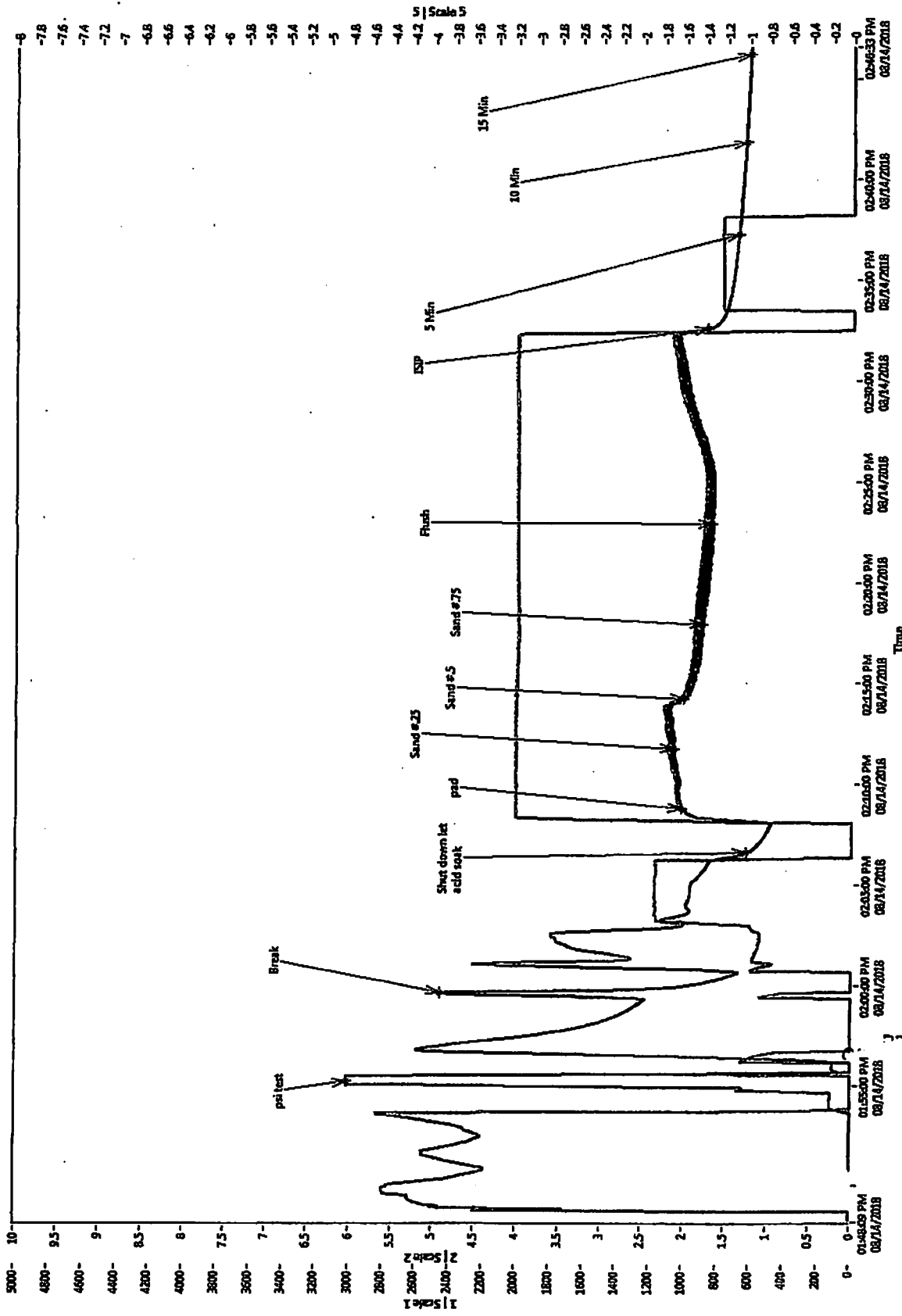
Invoice #: 20829



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1 | Pressure 1
2 | 52 Base*
6 | 21.1mm

HG T.Fowler #503 INV#20829



HG T.Fowler #503 INV#20829

Timestamp	Annotation	Pressure	Flow	Flow	Flow Total
8/14/2018 1:55:13 PM	psi test	3016.88	0.00	24.52	24.52
8/14/2018 2:01:33 PM	Break	1407.52	1.16	0.99	26.54
8/14/2018 2:08:38 PM	Shut down let acid soak	833.28	0.00	10.27	35.81
8/14/2018 2:08:48 PM	pad	1025.18	4.01	12.69	38.23
8/14/2018 2:11:46 PM	Sand #.25	1070.88	4.01	24.70	60.24
8/14/2018 2:14:13 PM	Sand #.5	1013.94	4.08	9.73	60.04
8/14/2018 2:17:55 PM	Sand #.75	889.52	4.05	14.82	74.93
8/14/2018 2:22:57 PM	Flush	848.63	4.05	20.10	95.09
8/14/2018 2:32:38 PM	ISIP	875.99	0.00	37.99	133.15
8/14/2018 2:37:17 PM	5 Min	888.67	1.57	43.87	138.03
8/14/2018 2:41:52 PM	10 Min	847.38	0.00	45.25	140.41
8/14/2018 2:46:13 PM	15 Min	620.80	0.00	46.25	140.41

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