

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

API 47 - 043 - 03605 County Lincoln District Duval  
Quad Griffithsville 7.5' Pad Name T Fowler Field/Pool Name Griffithsville  
Farm name Andy & Rebecca McClure Well Number 514  
Operator (as registered with the OOG) HG Energy LLC  
Address 5260 Dupont Rd 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 4,231,938 Easting 416,895  
Landing Point of Curve Northing \_\_\_\_\_ Easting \_\_\_\_\_  
Bottom Hole Northing \_\_\_\_\_ Easting \_\_\_\_\_

Elevation (ft) 1008 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)  
\_\_\_\_\_  
\_\_\_\_\_

Date permit issued 3/12/20 Date drilling commenced 10/4/21 Date drilling ceased 10/8/21  
Date completion activities began 10/20/21 Date completion activities ceased 10/26/21  
Verbal plugging (Y/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 N  
Salt water depth(s) ft 1450 Void(s) encountered (Y/N) depths N  
Coal depth(s) ft 409-414 Cavern(s) encountered (Y/N) depths N  
Is coal being mined in area (Y/N) N

Reviewed by:

TU

11/12/2021

WR-35  
Rev. 8/23/13

API 47-043 - 03605 Farm name Andy & Rebecca McClure Well number 514

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	12	U	NA		
Surface	8 7/8	7	503	N	LS/17	84	Y
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4	4 1/2	2558	U	J-55/10.5		Y
Tubing		2 3/8	2360	U	J-55/4.7		
Packer type and depth set							

Comment Details Tubing set on tension packer @ 2360'

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							
Surface	Class A	135	15.6	1.18	159	0	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50/50 Pozmix	100/130	13.2/14.2	1.64/1.21	164/157	68	
Tubing							

Drillers TD (ft) 2650 Loggers TD (ft) 2646  
 Deepest formation penetrated Berea Plug back to (ft) \_\_\_\_\_  
 Plug back procedure \_\_\_\_\_

Kick off depth (ft) \_\_\_\_\_

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 7" casing centralizers @ 42' & 461'  
4 1/2" casing centralizers @ 2054, 2138, 2222, 2306, 2390, 2474.

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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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Berea	2466-2486	TVD
	2466-2486	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

<u>LITHOLOGY/ FORMATION</u>	<u>TOP DEPTH IN FT NAME TVD</u>	<u>BOTTOM DEPTH IN FT TVD</u>	<u>TOP DEPTH IN FT MD</u>	<u>BOTTOM DEPTH IN FT MD</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H<sub>2</sub>S, ETC)</u>
sand/shale	0	409	0		
coal	409	414			
sand/shale	414	1116			
Salt Sand	1116	1748			
Little Lime	1748	1780			
Pencil Cave	1780	1786			
Big Lime	1786	1988			
Big Injun	1988	2044			
Shale	2044	2445			
Coffee Shale	2445	2466			
Berea	2466	2486			
Shale	2486	2650			

Please insert additional pages as applicable.

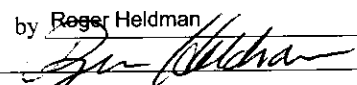
Drilling Contractor Naoh Horn Well Drilling  
Address 1070 Sandy Valley LN City Oakwood State VA Zip 24631

Logging Company Appalachian Well Surveys  
Address 10291 Ohio Ave City Cambridge State OH Zip 43725

Cementing Company See attached  
Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Stimulating Company Reliance Well Service  
Address 510 Cranberry St, Suite 301 City Erie State PA Zip 16507

Please insert additional pages as applicable.

Completed by Roger Heldman Telephone 304-420-1107  
Signature  Title Operations Mgr Date 10/29/21

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

Thomas Fowler 514 ( API # 47-043-03605 )

Surface Casing Cementing: Formation Cementing Inc, P.O. Box 2267, Zanesville, OH 43702-2267

Long Sting Casing Cementing: Oilfield Partners Energy Services LLC, 1798 Old Rt. 33, Weston, WV 26452



**Reliance**  
WELL SERVICES LLC

510 Cranberry Street  
Suite 230  
Erie, PA 16507  
Phone 814.454.1644  
Fax 814.454.1164  
24 Hour 412.906.0992

# Invoice

<b>P.O.#</b>	<b>Inv. Date</b>	<b>Invoice #</b>
12060	10/21/2021	12145

<b>Job Date</b>	<b>DUE DATE</b>
10/21/2021	11/20/2021

HG Energy, LLC  
5260 DuPont Rd  
Parkersburg, WV 26101

API#	Lease	Well#	State	County	Stages	Terms & Type
	Thomas Fowler	514	WV	Lincoln	1	Oil/Gas

Description	Quantity	Unit Price	Amount
Pump Truck Charge (#131)	1		
Blender Truck Charge (#210)	1		
Control Van Charge (#710)	1		
Acid Truck Charge (#507)	1		
Acid HCL 15%	250		
4 N 1 - Inhibitor & Iron Control (in acid)	0.5		
Sand: Bulk 20/40 API/100 LB (#623)	50		
Pro Gel 4.0L - Liquid Guar	30		
BXL 10C - Crosslinker	10		
BXL-A - Breaker Activator	10		
AP-1 - Oxidizing Breaker	10		
Pro CLA Firm LP - Clay Control	10		
NE-21 Non-Emulsifier/Surfactant	10		
BioClear 1000 - Dry Biocide	1		
DISCOUNT FOR PAYMENT WITHIN TERMS	1		
NON DISCOUNTED ITEMS			
Mileage (waived after first well of the same trip)	0		
Fuel Surcharge	1		

Thank you for your business. **Total**

Terms are Net 30, based on the job completion date. Balances not paid after 30 days are subject to a monthly 1.5% service charge in addition to the Non Discounted total amount due.

**Balance Due**

11/12/2021



# Reliance

Well Services, LLC

## X-Link Frac

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HG Energy, LLC  
Treater: Joe Stevens  
Date: 10/21/2021  
Lease: Thomas Fowler  
Well #: 514  
Lincoln County, WV



**Reliance**  
WELL SERVICES, LLC

500 Crumplins Drive  
Sally, WV  
Box 774, West  
Charm, WV 26024  
Phone: 304.644.1100  
Fax: 304.644.0092

**Operator:** HG Energy, LLC  
**Lease:** Thomas Fowler  
**Well #:** 514  
**Location:** Lincoln County, WV

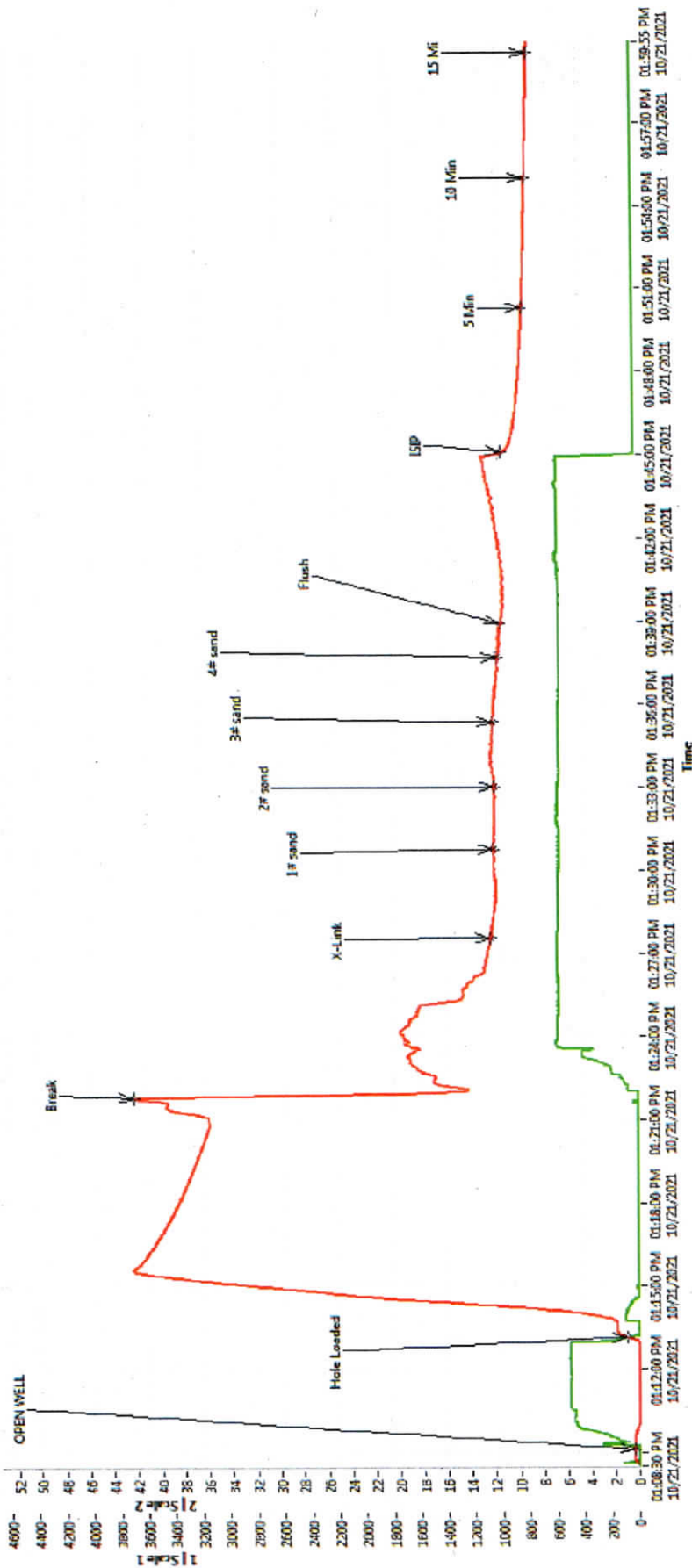
**Supervisor:** Joe Stevens  
**Pump Time:** 1:09 PM  
**Flush Time:** 1:38 PM  
**Date:** 10/21/2021

Stage	Depth (psi)	Breakdown (psi)	Clean Vol H2O (bbls)	Slurry Discharge (bbls)	Acid 15% HCL (gals)	Inhib & Iron Ctrl (gals)	API 20/40 Sand (sacks)	Ave. Treating (psi)	5 min. SIP (psi)	10 min. SIP (psi)	15 min. SIP (psi)	Pro Gel 4.0L Guar Gel (lbs)	BXL-10C X-Linker (gals)	BXL-A Breaker Activator (gals)	AP-1 Breaker (lbs)	Pro CLA Firm LP Clay Control (gals)	Pro NE-21 Non Emulsifier (gals)	BioClear 1000 Biocide (lbs)
1	2480	3,712	165	125	250.00	0.50	50.00	1,098	814	782	759	30.00	10.00	10.00	10.00	10.00	10.00	1.00
<b>Total</b>					<b>250.00</b>	<b>0.50</b>	<b>50.00</b>					<b>30.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>10.00</b>	<b>1.00</b>

**Comments:**  
Stage 1 10/21/2021: Treated per design.



HG ENERGY, LLC – THOMAS FOWLER #514 – STAGE 1 COMMENTS



**JOB COMMENTS AND DETAILS**

<b>Job Name</b>	Thomas Fowler #514
<b>Location</b>	Lincoln County, WV
<b>Company</b>	HG Energy, LLC
<b>Comments</b>	Stage 1 of 1. Treated Per Design.

**GRAPH NOTES AND RANGES**

Timestamp	Annotation	Pressure 1	Discharge Rate	Stage Total (gal)	Grand Total (gal)	Stage Total (bbl)	Grand Total (bbl)
10/21/2021 1:09:05 PM	OPEN WELL	34.64	0.00	2.49	2.49	0.06	0.06
10/21/2021 1:13:09 PM	Hole Loaded	87.41	1.28	824.29	824.29	19.63	19.63
10/21/2021 1:22:42 PM	Break	1579.62	2.24	892.06	892.06	21.24	21.24
10/21/2021 1:27:32 PM	X-Link	1072.36	6.70	2131.69	2131.69	50.75	50.75
10/21/2021 1:30:45 PM	1# sand	1048.24	6.53	3024.16	3024.16	72.00	72.00
10/21/2021 1:33:01 PM	2# sand	1042.37	6.61	629.47	3653.64	14.99	86.99
10/21/2021 1:35:20 PM	3# sand	1050.78	6.54	634.39	4288.02	15.10	102.10
10/21/2021 1:37:40 PM	4# sand	1014.47	6.40	629.79	4922.38	15.00	117.20
10/21/2021 1:38:55 PM	Flush	991.14	6.43	337.52	5259.89	8.04	125.24
10/21/2021 1:45:06 PM	ISIP	975.33	0.00	1661.84	6921.74	39.57	164.80
10/21/2021 1:50:18 PM	5 Min	814.35	0.00	1661.84	6921.74	39.57	164.80
10/21/2021 1:55:02 PM	10 Min	782.28	0.00	1661.84	6921.74	39.57	164.80
10/21/2021 1:59:31 PM	15 Min	758.89	0.00	1661.84	6921.74	39.57	164.80

*Quality Control Job Sheet*

Customer	HG Energy, LLC
Date	10/21/2021
Well	Thomas Fowler #514

**PHYSICAL INVENTORY**

Chemical	Starting Inventory	Final Inventory	Total Pumped
Pro Gal 4.0L	200.00	170.00	30.00
BXL-10C	10.00	0.00	10.00
BXL-A	10.00	0.00	10.00
AP-1 Breaker	10.00	0.00	10.00
Pro CLA Firm LP	10.00	0.00	10.00
Pro NE-21	10.00	0.00	10.00
BioClear 1000	1.00	0.00	1.00

Acid	Acid Volume Out	4 N 1 Added	Acid Voume In	Total
Acid 15%	250	0.5	0	250