

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

API 47 - 087 - 04755 County ROANE District SMITHFIELD
Quad LOONEYVILLE 7.5' Pad Name FERRELL, C.B. Field/Pool Name CLOVER
Farm name MAY, TIMOTHY D. Well Number 105
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 4,285,444 M Easting 475,643 M
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing 4,285,522 M Easting 475,789 M

Elevation (ft) 1,110' 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

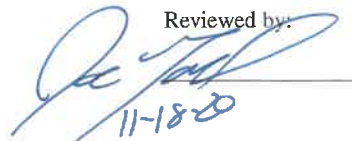
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Date permit issued 9/14/20 Date drilling commenced N/A Date drilling ceased N/A
Date completion activities began 9/17/20 Date completion activities ceased 9/17/20
Verbal plugging (Y/N) N Date permission granted _____ Granted by _____

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 1700' Void(s) encountered (Y/N) depths None
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) N

Reviewed by: 
11-18-20

API 47-087 - 04755 Farm name MAY, TIMOTHY D. Well number 105

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	12 1/4"	11 5/8"	30'	Used	LS		Existing
Surface	8 3/4"	7"	507'	New	LS	64'	Existing
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2453.15'	New	J-55		Existing
Tubing		2 3/8"	2176'	New	J-55		
Packer type and depth set							

Comment Details Circulated Est. 25 sks to surface on 7" surface cement job. Circulated Est. 25 sks to surface on 4 1/2" cement job. *Existing Casing/Cement program*

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	130	15.6	1.18	153	Surface	Existing
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	50:50 Pozmix	100/125	13.2/14.2	1.64/1.27	164/186	66'	Existing
Tubing							

Drillers TD (ft) 2510' Loggers TD (ft) 2511'

Deepest formation penetrated Big Injun Plug back to (ft) N/A

Plug back procedure N/A

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Kick off depth (ft) 600'

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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 _____

20 Centralizers every 88 from bottom on 4 1/2". Centralizer placed mid string on 7" *Existing*

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 _____

JSP

API 47- 087 - 04755 Farm name MAY, TIMOTHY D. Well number 105

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	3/23/15	2288'	2296'	32	Big Injun

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)
1	3/26/15	5	551	1751	606	2,500	149	
1	9/17/20	1.5	1098	1194	1043		10	2500 gals HCL

Please insert additional pages as applicable.

JRZ

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Big Injun</u>	<u>2133'- 2166'</u> TVD	<u>2270'- 2308'</u> 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	1294	0	1314	
Sand	1294	1494	1314	1533	
Shale	1494	1538	1533	1568	
Sand	1538	1566	1568	1612	
Shale	1566	1682	1612	1744	
Sand	1682	1992	1744	2104	
Little Lime	1992	2032	2104	2150	
Pencil Cave	2032	2034	2150	2154	
Big Lime	2034	2118	2154	2250	
Keener	2118	2133	2250	2270	
Big Injun	2133	2166	2270	2308	Drilled directional N 59° E a distance of 615'
Shale	2166	2348	2308	2510	
TD	2348		2510		

Please insert additional pages as applicable.

Drilling Contractor Decker Drilling
 Address 11565 State Route 676 City Vincent State OH Zip 45784

Logging Company Weatherford International
 Address 777 North River Avenue City Weston State WV Zip 26452

Cementing Company Universal Services
 Address Hall Rd City Buckhannon State WV Zip 26201

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 [Signature] Title Operations Manager Date 11/3/20

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

[Signature]



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

Acid

HG Energy

Company Rep: Dustin
Treater: Daniel L Graham
9/17/2020
Well: C .B. Ferrell #105
Roane County, WV

Casing

OD: 4.5"
ID: N/A
Weight: 10.5 lb.
TD: 2510 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: N/A
Breakdown: N/A
Max: 1198 psi
Average: 1098 psi
Displacement: 1176 psi

Volumes:

Pad N/A
Treatment: 60 BBL
#VALUE! 2500 Gal
Total: 70 BBL
Flush: 10 BBL

Open Hole

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

Perforations

of Shots: N/A
Top Perf: 2288 ft.
Bottom Perf: 2296 ft.

Rates

Average: 1.5 bbl/min
Max: 2 bbl/min

Notes:

Invoice #: 23829

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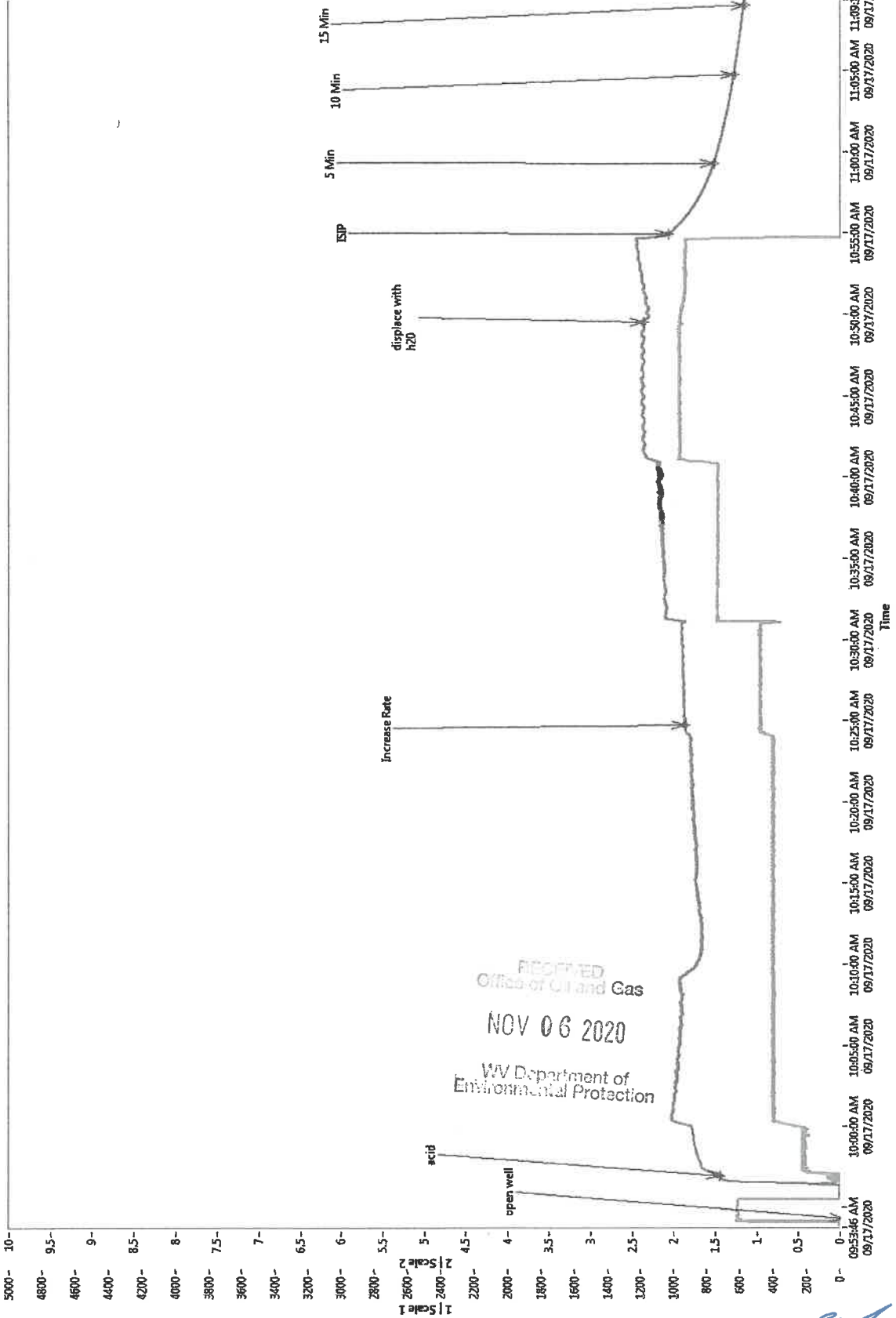
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Sep 17, 2020

HG Energy Ferrell #105 INV#23829

1 | Pressure 1
2 | Discharge Rate



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Sep 17, 2020

HG Energy Ferrell #105 INV#23829

Timestamp	Annotation	Pressure 1	Discharge Rate	Stage Total (gal)	Grand Total (gal)	Stage Total (bb)	Grand Total (bb)
9/17/2020 9:54:18 AM	open well	-18.85	1.18	7.32	7.32	0.17	0.17
9/17/2020 9:56:56 AM	acid	721.25	0.00	72.41	72.41	1.72	1.72
9/17/2020 10:24:43 AM	Increase Rate	933.59	0.97	956.13	956.13	22.77	22.77
9/17/2020 10:49:30 AM	displace with h2o	1186.70	1.91	2512.89	2512.89	59.83	59.83
9/17/2020 10:54:56 AM	ISIP	1030.31	0.00	411.85	2926.08	9.81	69.67
9/17/2020 10:59:17 AM	5 Min	756.91	0.00	411.85	2926.08	9.81	69.67
9/17/2020 11:04:47 AM	10 Min	634.32	0.00	411.85	2926.08	9.81	69.67
9/17/2020 11:09:02 AM	15 Min	573.86	0.00	411.85	2926.08	9.81	69.67

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