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

API	<u>47</u> - 043	_ 03477	County LINCOL	_N	District DUVAL	
Quad _	GRIFFITHSVI	LLE 7.5'		S, M.A.	Field/Pool Name	GRIFFITHSVILLE
Farm n	<sub>ame</sub> HG ENEF	RGY, LLC.				
Operat	or (as registered	with the OO	G) H.G. ENERGY LL	С		
Addres	5260 DuPO	NT ROAD		RKERSBURG	State WV	Zip <u>26101</u>
As Drii	lled location N	NAD 83/UTM Top hole	Attach an as-drille Northing 4,232,188 M	ed plat, profile view, a	nd deviation survey sting 416,064 M	
	Landing Point	of Curve	Northing	Ea:	sting	
	Bott	tom Hole	Northing 4,232,085 M	Ea	sting 416,132 M	
Elevati	on (ft) 945'	GL	Type of Well	■New □ Existing	Type of Repor	t 🗆 Interim 🛮 🕏 Final
Permit	Type 🛔 Dev	viated □	Horizontal 🛮 🗆 Horizon	tal 6A 🛛 Vertical	Depth Type	□ Deep ■ Shallow
Туре о	f Operation □ C	Convert 🗆	Deepen	ı Plug Back □ Redı	rilling   Rework	□ Stimulate
Wall T	·mo = Deino Di	amanal m CD	M = Ges = Oil = See	andami Dagayami = 6	Polytion Mining — C	storage   Other
W CII 1	ype d Brille Di	sposai u CD	WI E Gas a OII E Sec	collulary Recovery 11 s	Solution withing U.S.	norage 🗆 Oulei
Type o	f Completion	Single □ M	ultiple Fluids Produ	ced □ Brine □Gas	□ NGL ■ Oil	□ Other
Drilled	with □ Cable	■ Rotary				
Produc	-	□ Mud tive(s)	□ Fresh Water ■ Brine	2		d ■ Fresh Water □ Brine  □ Brine
					91	Office of Oil and Gas
Date pe	ermit issued	6/29/15	Date drilling comn	nenced10/13/15	Date drilling	DE015/452015
Date co	mpletion activit	ies began	10/21/15	Date completion act	tivities ceased	10/23/15 
Verbal	plugging (Y/N)	N	Date permission granted	l	Granted by	Environmental Protection
Please 1	note: Operator i	s required to	submit a plugging applica	ation within 5 days of	verbal permission to	plug
Freshw	ater depth(s) ft		None	Open mine(s) (Y/N)	depths	None
	ter depth(s) ft _		1160'	Void(s) encountered		None
	epth(s) ft		3'- 568'	Cavern(s) encountered		A.I.
	being mined in a		N		-	

API 47- 043	_ 03477	Farm n	ame_HG ENE	ERGY, LLC		Well nu	mber 231		
								1	
CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft			d cement circulate (Y/ N) Provide details below*	
Conductor	12 1/4"	11 5/8"	30'	Used	LS	1		Sand In	
Surface	8 3/4"	7"	591'	New	LS		64'	Y	
Coal								<del></del>	
Intermediate 1							-		
Intermediate 2				-					
Intermediate 3									
Production	6 1/4"	4 1/2"	2675.7'	New	J-55			Y	
Tubing									
Packer type and de	pth set		*****		<del></del> _				
Comment Details	Circulated Est. 50 s	ks to surface on 7" sur	face cement job. Circ	culated Est. 35 sks	to surface on 4 1/2	2" cement job.			
CEMENT DATA	Class/Type of Cement	Numbe of Sack			ield ³/sks)	Volume (ft <sup>2</sup> )	Cement Top (MD)	WOC (hrs)	
Conductor									
Surface	Reg Neat	150	15.0	6 1	.18	177	Surface	8	
Coal									
Intermediate 1									
Intermediate 2									
Intermediate 3							-		
Production	50:50 Pozmix	120/12	5 13.2/1	4.2 1.64	1/1.27 1	97/186	88'	8	
Tubing									
Drillers TD (ft)	2700'			Loggers TI	O (ft) 2700'				
Deepest format	ion penetrated	Berea		Plug back t					
Plug back proc	edure N/A								
Kick off depth (	(ft) <u>600</u> ,						Au	RECEIVED co of Oil and G	
Check all wireli	ine logs run	■ caliper ■ neutron	■ density ■ resistivity		d/directional ray	induc ■ temp	tion	oniDEC 1 4 2015	
Well cored	Yes 🖪 No	Conventio	nal Side	wall	Were c	uttings col	lected ■ Yes	n EnVocatment	
						_	V\	√Department  Prote  Prote	
DESCRIBE TH	E CENTRALI	ZER PLACEME	NT USED FO	R EACH CA	SING STRIN	IG	Envi	ronmental Prote	
EN CHINICULEUS BYERY 05 ITO	an outlon on 4 HZ , Central	izer placed mid string on 7°			<del></del>				
WAS WELL CO	OMPLETED A	S SHOT HOLE	□ Yes ■	No DE	TAILS				
WAS WELL CO	OMPLETED O	PEN HOLE?	□ Yes ■ N	o DETA	ILS				
WERE TRACE	RS USED a	Yes B No	TYPE OF TI	RACER(S) U	SED				

## PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	10/21/15	2525'	2533'	32	Berea
		-			
			· - · <u>- · - · - · - · - · - · - · - · -</u>		
	-				
	<u></u>	<del></del>			
		· · · · · · · · · · · · · · · · · · ·	·		
				L	

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	10/23/15	4	1173	3266	1281	1,000	149	
							O4:	RECEIVED
							Onic	of Oil and Gas
								RECEIVED  Of Oil and Gas  DEC 1 4 2015
							WVi	Denortm
		-					Environr	Department of nental Protection
					· · ·			On
		-						

Please insert additional pages as applicable.

Page 4 of 4 WR-35 Rev. 8/23/13 Farm name HG ENERGY, LLC. API 47- 043 \_ 03477 \_Well number 231 PRODUCING FORMATION(S) **DEPTHS** Berea 2430'- 2452' 2520'- 2542' 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 DURATION OF TEST psi NGL **OPEN FLOW** Gas Oil Water GAS MEASURED BY mcfpd bpd bpd bpd □ Estimated □ Orifice □ Pilot LITHOLOGY/ TOP **BOTTOM** TOP BOTTOM **FORMATION** DEPTH IN FT DEPTH IN FT DEPTH IN FT DEPTH IN FT DESCRIBE ROCK TYPE AND RECORD QUANTITY AND NAME TVD TVD MD MD TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H2S, ETC) Sand/Shale 563 0 0 Pittsburgh Coal 563 568 563 568 Sand/Shale 568 1706 568 1760 Big Lime 1706 1874 1760 1946 Big Injun 1874 2016 1946 2096 Shale 2016 2410 2096 2499 Coffee Shale 2430 2410 2499 2520 Berea 2430 2452 2520 2542 Drilled directional S 29.5° E a distance of 519' Shale 2452 2542 2700 TD 2700 Please insert additional pages as applicable.

Drilling Contractor Decker Drilling RECEIVED Office To Oil and Gas Address 11565 State Route 676 City Vincent Logging Company Weatherford International Address 11000 Performance PL OH City Youngstown State WV Department of Cementing Company Universal Services โตกงเรอกกายที่ใส่ Protection Address 14 Sewer Plant Rd City Buckhannon State Stimulating Company Producers Service Corp. Address 109 South Graham Street Zanesville State OH Zip 43701 City Please insert additional pages as applicable.

Title Operations Manager

Submittal of Hydraulic Fracturing Chemical Disclosure Information

Completed by Roger Heldman

Signature

Attach copy of FRACFOCUS Registry

Date 12/10/15

Telephone 304-420-1107

Prepared for: HG Energy

**Dustin Hendershot** 

304-481-7342



Prepared by:

**Producers Service Corp** 

Tony Lewellen

109 S. Graham St.

Zanesville, OH 43702

740-454-6253

INVOICE #:

19214

WELL NAME:

MA Bays #231

STATE & COUNTY: Lincoln County, WV

TOWNSHIP/FIELD: Griffithsville

DATE of SERVICE: 10/23/2015

CUSTOMER PO#

Amount Units Description Notes EA 1 BLENDER CHARGE 0-10 BPM 1 FLUID PUMP CHARGE 0-3000 PSI MIN CHARGE 4 HRS EA MILEAGE CHARGE PER UNIT ONE WAY 2 Units @ 66.6 Miles 133.3 MI SAND 20/40 OTTAWA 10 CWT SAND DELIVERY / TON MILES 33 TMILE 250 GAL IC ACID 15% ACID DELIVERY 4 HR PRO CLA LOK (KCL SUBSTITUTE) 10 GAL PRO NE-21 10 GAL **IRONTROL** 50 LB PRO GEL 4 150 LB 50 LB BUFFER I **BIO CLEAR 750** 1 LB 1 STAGE DATA VAN

1	Jn	it	C	0	S	t	

**Total Cost** 

Customer Approval: \_\_

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DEC 1 4 2015

WV Department of **Environmental Protection**