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

Office of Oil and Gas

FEB 2 0 2018

WV Department of Environmental Protection

API 47 - 087 -	04792 Cou	nty ROANE		District S	MITHFIE	LD	
Quad LOONEYVILLE	7.5' Pad	Name JACKSC	N LONG		Name C		
Farm name WEBB, PA				Well Nur			
Operator (as registered w		ENERGY LLC		= 2772			
Address 5260 DuPON	T ROAD	City PARK	RSBURG	State	WV	Zip	26101
		ch an as-drilled p 4,285,672 M		, and deviation Easting 476,36			
Landing Point o				Easting			
Botto	m Hole Northing			Easting			
Elevation (ft) 1,042'	GL T	ype of Well No	w 🗆 Existing	Туре	of Report	□Interim	■Final
Permit Type   Devia	ted   Horizontal	☐ Horizontal (	A Vertica	al Dept	th Type	□ Deep	■ Shallow
Type of Operation □ Co	nvert 🗆 Deepen	■ Drill □ Plu	g Back □ R	edrilling	Rework	□ Stimula	ite
Well Type ☐ Brine Disp	osal 🗆 CBM 🗆 Gas	■ Oil □ Second	ary Recovery	Solution Mi	ning □ Sto	orage 🗆 C	ther
Type of Completion ■ S Drilled with □ Cable		Fluids Produced	D Brine DC	ras LINGL	<b>A</b> Oil	D Other _	
Drilling Media Surface Production hole Air Mud Type(s) and Additiv	□ Mud □ Fresh W		Intermedia	ate hole 📕 A	ir □ Mud	■ Fresh	Water □ Brin
N/A							
Date permit issued		drilling commend	ed10/20/	17 Da	te drilling c		10/26/17
Date completion activities	s began11/1	7/17 D	ate completion	activities ceas	ed	12/5/17	
Verbal plugging (Y/N) _	N Date pern	nission granted		Grante	d by		
Please note: Operator is a	required to submit a pl	ugging application	within 5 days	of verbal perm	ission to pl	lug	
Freshwater depth(s) ft _	None	Op	en mine(s) (Y/I	N) depths		None	
Salt water depth(s) ft	1615', 1670'	Vo	id(s) encountere	ed (Y/N) dept	hs	Non	е
Coal depth(s) ft	None		vern(s) encount			No	ne
Is coal being mined in are	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	N	The contract of				
•	19134				1	Revie	wed by:

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Rev. 8/23/13								
API 47- 087	04792	Farm n	ame_WEBB, P	PATTY C.		Well	number 22	0
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"	14.3'	Used	<del> </del>	LS		sanded in
Surface	8 7/8"	7"	508.1'	New		LS	64'	Y
Coal								
Intermediate 1								
Intermediate 2								
Intermediate 3								
Production	6 1/4"	4 1/2"	2231.89'	New	J	-55		AECEIVED .
Tubing								Office of Oil and G
Packer type and de	epth set							FEB 2 0 201
Comment Details			ce cement job. Did not					W Departmen Environmental Pro
CEMENT DATA	Class/Type of Cement	Number of Sack			/ield t ³/sks)	Volume (ft <sup>3</sup> )	Ceme Top (N	
Conductor	Of Comon	Or Back	и (рр	5)(\frac{1}{2}	75K5)	<del>**** -/*</del>	100 (1	(IAC)
Surface	Reg Neat	140	15.6		1.18	165	Surfa	ice 8
Coal								
Intermediate I								
Intermediate 2					-			
Intermediate 3								
Production	50:50 Pozmi:	x 80/12	5 14.2	1.6	4/1.27	131/159	100	)' 8
Tubing								
Drillers TD (ft)	2250'		<u> </u>	Loggers T	D (ft) 225	O <sup>t</sup>		
Deepest format		Big Injun		Plug back				-
Plug back prod	•							
Kick off depth	( <del>0</del> )						<u> </u>	
Kick off depth	(16)			<del></del>				
Check all wirel	ine logs run	■ caliper ■ neutron	<ul><li>■ density</li><li>■ resistivity</li></ul>	□ deviat ■ gamma	ed/direction		duction mperature	□sonic
Well cored	Yes ■ No	<ul><li>Conventi</li></ul>	onal Sidew	vall	W	ere cuttings	collected =	ıYes □ No
			ENT USED FOI centralizer, 84' spacing from to			TRING		
WAS WELL C	OMPLETED A	AS SHOT HOLE	E □ Yes ■	No DE	ETAILS			
WAS WELL C	OMPLETED C	PEN HOLE?	□ Yes ■ No	DET.	AILS			
	CDG LIGED -	Ves ■ No	TVDE OF TE	A CED(C) I	ICED			

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API 47- 087 - 04792	Farm name_WEBB, PATTY C.	Well number 220
	1 th m mamo	Well indiffed

## PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	11/17/17	2068'	2078'	40	Big Injun
				1	
				:	RECEIVED Gas Office of Oil and Gas FEB 2 0 2018
					Office of Office
					EFB 20 2018
					ment of
					WV Department of WV Department of Environmental Protection
					EUAllo

Please insert additional pages as applicable.

## STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

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)
12/5/17		455	624	542	2500	147	0
					<del> </del>		
					<del></del>		
				<del></del>			
				<del></del>			
					<del> </del>		
					<del> </del>	<del> </del>	
					<del>  </del>		
		Date Rate (BPM) 12/5/17 5	Date Rate (BPM) Pressure (PSI)  12/5/17 5 455	Date         Rate (BPM)         Pressure (PSI)         Pressure (PSI)           12/5/17         5         455         624	Date         Rate (BPM)         Pressure (PSI)         Pressure (PSI)         ISIP (PSI)           12/5/17         5         455         624         542	Date   Rate (BPM)   Pressure (PSI)   ISIP (PSI)   Proppant (lbs)	Date   Rate (BPM)   Pressure (PSI)   ISIP (PSI)   Proppant (Ibs)   Water (bbls)

Please insert additional pages as applicable.

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API 47- 087	04792	Farm	<sub>name</sub> WEBB,	PATTY C.		Well	number	220	
PRODUCING	FORMATION(	(S)	<u>DEPTHS</u>						
Big Injun			<del></del>	T 10					
Dig injuli		<del></del> .	2052'- 2082'	TVD _	···	MD			
						<del></del>			
						<del></del>			
	· · · · · · · · · · · · · · · · · · ·			<del></del>					RECEIVED Office of Oil and Gas
Please insert ac	lditional pages a	s applicable.							Office of Oil and Oil
GAS TEST	□ Build up □	Drawdown	□ Open Flow	C	DIL TEST D	Flow [	Dump		FEB 2 0 2018
SHUT-IN PRE	SSURE Surf	ace	_psi Botto	om Hole	psi	DURA?	TION C	F TES	T W Department of Environment of Protection
OPEN FLOW	Gas	Oil	NGL.	•	Water	GASI	AE A STI	ו משמ	RV
01E(120 W	mcf	pd	NGL bpd	_ bpd	bpd	□ Estir	nated	□ Ori	fice Dilot
LITHOLOGY/	ТОР	воттом	TOP	воттом					
FORMATION	DEPTH IN FT	DEPTH IN FT	DEPTH IN FT		Γ DESCRIBE	ROCK TY	PE AND	RECOR	D QUANTITYAND
	NAME TVD	TVD	MD	MD					NE, OIL, GAS, H₂S, ETC)
Sand/Shale	0	874	0						-
Sand	874	980							
Shale	980	1014							
Sand	1014	1174							
Shale	1174	1592							
Sand	1592	1757							
Shale	1757	1798				-			
Sand	1798	1890							
Little Lime	1890	1900							
Pencil Cave	1900	1907							
Big Lime	1907	2038							
Keener	2038	2052							
Big Injun	2052	2082							
Shale	2082	2250							
Please insert ad	lditional pages a	s applicable.							
Drilling Contra	ctor Noah Horn	Well Drilling							
Address 1070 S			City	Vansant		State	VA	Zip	24656
	184416	l t							
Logging Comp	any Weatherford	Inernational		Varianteira		<b>.</b>	OH	<b></b>	
Address 1100 P	enormance Place		City	Youngstown		State	On	Zıp	44502
Cementing Cor	npany C&JEne	ergy Services							
Address 1650 H	ackers Creek Rd		City	Jane Lew		State	W	Zip	26378
Stimulating Co.	mpany Produc	ers Service Cor	р.						
Address 109 So	uth Graham Street		City	Zanesville		State	ОН	Zip	43701
	ditional pages a					_			
Completed by	Roger Heldman				Telephone	304-420	-1107		
Signature	Den 1h	ed	Title O	perations Mana	ager		Date 2/	8/2018	
ĺ		·				000 - 60	0.0775	<b>.</b>	
Submittal of Hy	draulic Fracturi	ng Chemical I	Disclosure Infor	mation	Attach copy of	t FRACF	OCUS	Regist	ry

Prepared for:  HG Energy  Dustin Hendershot	PRODUCERS SERVICE CORP.		Pro Da 109 Zar	epared by: oducers Service Corp niel L Graham O S. Graham St. nesville, OH 43702	
INVOICE #: 20323			/40		and the parties
WELL NAME: Jackson long220		-		Office of	FIVED Oil and Gas
COUNTY/STATE: Roane/WV				FFB 5	2 0 2018
TOWNSHIP/FIELD: Clover Field				•	
DATE of SERVICE: 12/5/2017				W/ De	partment of
CUSTOMER PO#:				Environme	ntal Protection
Description	Notes	Amount	·Units	Unit Cost	Total Cost
FLUID PUMP CHARGE 0-3000 PSI MIN CHARGE 4 HRS		1	EA		-
BLENDER CHARGE 0-10 BPM		1	EA		
MILEAGE CHARGE PER UNIT ONE WAY	*		MI		
IC ACID 15%		250	GAL		
PRO HIB II		0.5	GAL	4	
ACID DELIVERY PRO CLA LOK (KCL SUBSTITUTE)		2	HR		
PRO CLA LOK (KCL SUBSTITUTE)	in a second	15	GAL		
PRO NE-21		5	GAL		
PRO GEL 4		150	LB		
BUFFERI		50	LB		
BUFFER II		50	LB		
BIO CLEAR 750 AP BREAKER		1 15	LB LB		
BXL-A		10	GAL		
		10	GAL		
BXL-10C SAND 20/40 OTTAWA		25	CWT		
SAND DELIVERY / TON MILES		375			
DATA VAN			STAGE		
ZATA TAIL			O I I I I		
			lane.		
	•				
		-			
			-		
			-		