01/16/2015

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

API 47 017 06617	County Doddridg	je Dis	trict New Miltor	n			
Quad New Milton	Pad Name Key O						
Farm name Shirley Plauger		W	ell Number A.W				
Operator (as registered with the OC	OG) Key Oil Company						
Address 22 Garton Plaza	City Wes	ton	State WV	Zip 26452			
As Drilled location NAD 83/UT Top hole Landing Point of Curve Bottom Hole	M Attach an as-drilled Northing 39.19313 Northing N/A Northing N/A	I plat, profile view, and de Easting Easting Easting	80.72808 N/A	·			
Elevation (ft) 1169 G	L Type of Well	New □ Existing	Type of Report	□Interim ■Final			
Permit Type   Deviated	Horizontal   Horizont	al 6A 📕 Vertical	Depth Type	□ Deep			
Type of Operation □ Convert	□ Deepen 🖷 Drill 🗆	Plug Back □ Redrillin	g 🗆 Rework	■ Stimulate			
Well Type □ Brine Disposal □ C	BM B Gas B Oil 🗆 Seco	ondary Recovery	ion Mining 🗆 St	orage 🗆 Other			
Drilling Media Surface hole ■ Production hole ■ Air □ Mud Mud Type(s) and Additive(s)	Air □ Mud □Fresh Wat □ Fresh Water □ Brine		e ■Air □Mud	I □ Fresh Water □ Brine			
Date permit issued09/29/201 Date completion activities began	4 Date drilling comm 12/05/14	nenced11/12/14  Date completion activiti	_ Date drilling	ceased 11/21/2014 12/08/14			
Verbal plugging (Y/N) N/A	_ Date permission granted	11/21/14	Granted by	Douglas Newlon			
Please note: Operator is required to	o submit a plugging applica	tion within 5 days of verb	al permission to p	olug			
Freshwater depth(s) ft	110	Open mine(s) (Y/N) dept	hs	N			
Salt water depth(s) ft	1200	Void(s) encountered (Y/	VED depths	N			
Coal depth(s) ft	N/A	Office of C Cavern(s) encountered (Y	il and Gas	N			
Is coal being mined in area (Y/N)_	N	JAN 0	,	Reviewed by:			
		WV Depa Environment					

API 47- 017	_ 06617	Farm na	ame Shi	irley Plauge	er	Wel	l number_A.W	/. Robinson #3
CASING	Hole	Casing		Nev	v or Grade		Basket	Did cement circulate (Y/N)
STRINGS Conductor	Size	Size	Dep			1 55	Depth(s) N/A	* Provide details below*
Surface	20"	13-3/8"	38	N	EW ,	J-55	19/14	IA IA
Coal	NI/A							
Intermediate 1	N/A 12-1/4"	9-5/8"	210	0   NI	EW .	J-55		100 SKS. CTS (Y)
Intermediate 2	8-3/4"	9-5/8" 7"	135			J-55 J-55		200 SKS. CTS (Y)
Intermediate 3	8-3/4		135	N N	EVV	3-55	<del> </del>	200 383. 013 (1)
Production	6-1/2"	4-1/2"	297	71 N	EW .	J-55		160 SKS. CBL POZ
Tubing	0-1/2	4-1/2	231	<del>'                                    </del>		-		ETOC 900'
Packer type and de	pth set							2.0000
Comment Details								
CEMENT DATA	Class/Type of Cement	Number of Sack		Slurry wt (ppg)	Yield ( ft ³/sks)	Volume	Cemer Top (M	
Conductor	N/A	N/A		N/A	N/A	N/A	N/A	
Surface	CLASS A	100		15.6	1.13		СТS	8 HRS.
Coal				· <u>-</u>				
Intermediate 1								
Intermediate 2	CLASS A	170		15.6	1.23		СТS	8 HRS.
Intermediate 3								!
Production	CBL POZ	160		13.5	1.53		ETOC	900'
Tubing			<u> </u>			1		
Drillers TD (ft) Deepest format Plug back prod	tion penetrated	GORDON 2820			gers TD (ft) 30 g back to (ft) _			
Kick off depth	(ft) <u>N/A</u>							ı
Check all wirel	line logs run	<ul><li>■ caliper</li><li>■ neutron</li></ul>	<b>≜</b> der	•	deviated/direct gamma ray		induction temperature	□sonic
Well cored	Yes 🖪 No	Conventi	onal	Sidewall	V	Vere cutting	s collected	Yes ■ No
DESCRIBE TI	HE CENTRAL	IZER PLACEM	ENT US	SED FOR EA	.CH CASING S	STRING		
								<u> </u>
							-	
		AS SHOT HOLI	E oY	es 🛢 No	DETAILS			
WAS WELL C	COMPLETED A							ECEIVED
WAS WELL C	COMPLETED A	-					/	
		OPEN HOLE?	□ Yes	■ No	DETAILS _		Onice	of Oil and Gas
		OPEN HOLE?	□ Yes	■ No	DETAILS _			
WAS WELL C	COMPLETED (							Of Oil and Gas N 0 2 2015
	COMPLETED (				DETAILS _ ER(S) USED _		JA	N 0 2 2015
WAS WELL C	COMPLETED (						JA WV D	

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## PERFORATION RECORD

	Perforated from	Perforated to	Number of	
Perforation date	MD ft.	MD ft.	Perforations	Formation(s)
12/08/2014	2596	2820	20	GANTZ/GORDON
12/08/2014	2396	2470	30	WEIR
12/08/2014	2218	2250	20	INJUN
12/08/2014	2180	2195	20	KEENER
12/08/2014	2106	2116	20	BLUE MONDAY
	-			
			_	
	12/08/2014 12/08/2014 12/08/2014 12/08/2014	Perforation date         MD ft.           12/08/2014         2596           12/08/2014         2396           12/08/2014         2218           12/08/2014         2180	Perforation date         MD ft.         MD ft.           12/08/2014         2596         2820           12/08/2014         2396         2470           12/08/2014         2218         2250           12/08/2014         2180         2195	Perforation date         MD ft.         MD ft.         Perforations           12/08/2014         2596         2820         20           12/08/2014         2396         2470         30           12/08/2014         2218         2250         20           12/08/2014         2180         2195         20

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	12/08/14	21	2806	2928	2500	12,000	137	180,000
2	12/08/14	22	2832	2585	2860	15,000	152	215,000
3	12/08/14	20	2856	2600	2540	15,000	164	233,000
4	12/08/14	20	3205	3723	2910	3,000	100	150,000
5	12/08/14	21	2810	4128	2260	15,500	194	208,000
		_						,
					_			
							5505	
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						Off	ice of Oil	and Gas
						•	JAN 0 2	2015

Please insert additional pages as applicable.

WV Department of Environmental Protection

API 47- 017	_ 06617	Farm	<sub>name</sub> Shirley F	Plauger	We	ll number	A.W. Robir	nson #3
PRODUCING 1	FORMATION(S		<u>DEPTHS</u>					
GORDON			2820	_ TVD	M	D		
WEIR			2450					
INJUN			2230					
KEENER			2185					
Please insert ad	ditional pages as	applicable.						
GAS TEST	□ Build up □	Drawdown	■ Open Flow	OIL	TEST Flow	□ Pump		
SHUT-IN PRE	SSURE Surfa	ce_860	_psi Botto	m Hole 2064	psi DUR	ATION C	F TEST 48	hrs
OPEN FLOW	Gas 518 mcfp		NGL bpd 0		700 700		RED BY  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 T			
	0	477	0					1
H20	110	113	110	113	FRESH			
SALT WATER	1200	1203	1200	1203			TWATER	-
LITTLE LIME	2070	2090	2070	2090			(WHITE)	
BLUE MONDAY	2090	2120	2090	2120	BLUE GRAY			
BIG LIME	2130	2180	2130	2180	GRAY			-
KEENER	2180	2200	2180	2200		200.00	GRAY	1
INJUN	2200	2260	2200	2260	GRAY BROWN			4
SHALE	2260	2390	2260	2390			& SHALE	
WEIR	2390	2480	2390	2480			GRAY	+
SHALE	2480	2590	2480	2590			& SHALE	+
GANTZ	2590	2610	2590	2610			ROWN	_
SHALE	2610	2810	2610	2810		77.	HALE	
GORDON Please insert ad	ditional pages as	2820	2810	2820		GRA	Y BROWN	-
	ctor NEXUS DRI		G'.	IANE LEW		10/1/	26279	
Address moos			City	JANE LEW	Stat	te WV	Zip _26378	
Logging Compa								
Address 82 OLD			City	BUCKHANNON	Stat	te WV	Zip _26201	
Cementing Con	mpany UNIVERS	AL WELL SEF	RVICE					
	RUN ROAD		City	BUCKHANNON	Stat	te WV	Zip 26201	
Address STALL			n in					
Stimulating Cor		SAL WELL SI	ERVICE					
		SAL WELL SI	ERVICE City	BUCKHANNON	Stat	te WV	Zip 26201	
Stimulating Con Address 5 HALL							Zip 26201 RECEI	VI-D
Stimulating Con Address 5 HALL Please insert ad	RUN ROAD				Stat Telephone (304)		RECE	VI-D

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API 47- 017 - 06617	Farm name Shirley Plaug	er	Well number A.W. Robinson #3		
PRODUCING FORMATION(S) BLUE MONDAY	<u>DEPTHS</u> 2110 TV	D	MD		
			<del></del>	-	

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