

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

API 47-033-05308 County Harrison District _____
Quad Wallace 7.5' Pad Name Orr Field/Pool Name _____
Farm name Trust Joice MacMillan Well Number 1998
Operator (as registered with the OOG) Waco Oil & Gas Co., Inc.
Address P.O. Box 397 City Glenville State WV Zip 26351

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 328945 Easting 1719157
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 1326' 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 _____ Date drilling commenced 10/18/2009 Date drilling ceased 10/29/2009
Date completion activities began _____ Date completion activities ceased _____
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

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Freshwater depth(s) ft 73' Open mine(s) (Y/N) depths _____ N
Salt water depth(s) ft None Void(s) encountered (Y/N) depths _____
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) _____

APPROVED
NAME: Jacqueline Thurston
DATE: 5/12/16
05/27/2016

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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	18"				Pulled		
Surface	12 1/2	11 3/4	667	N			Y
Coal							
Intermediate 1	10 1/4	8 5/8	2590	N			Y
Intermediate 2							
Intermediate 3							
Production	7 7/8	5 1/2	7635	N			
Tubing							
Packer type and depth set							

Comment Details _____

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	50/50 PO2	200	14.4	1.18		Surface	8
Coal							
Intermediate 1	50/50 PO2	700	14.2	1.26		Surface	8
Intermediate 2							
Intermediate 3							
Production						5992'	
Tubing							

Drillers TD (ft) 7638' Loggers TD (ft) 7635'

Deepest formation penetrated Marcellus 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 _____

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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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	04/11/2010	7610	7630	120	Marcellus

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	04/22/10	81	3500	3800	1850	730,000	22,210	

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Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>7610-7630</u>	<u>TVD</u>	<u>MD</u>

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 655 psi Bottom Hole _____ psi DURATION OF TEST _____ hrs

OPEN FLOW Gas 2000 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
KB	0	10	0		
Fill	10	15			Soft
Sd & Shale	15	160			grey - mix, soft
Red Rock	160	190			soft
Soft Shale	190	330			grey - mix, med.
Red Rock	330	340			
Sd & Shale	340	1020			grey
Coal	1020	1030			Black, hard mix
Sd & Shale	1030	1535			grey-mix, med.
Sd	1535	1605			grey & white, hard
Sd & Shale	1605	1849			grey, med
Salt Sands	1849	2050			grey, med
Shale	2050	2120			grey, soft
Maxton	2120	2165			grey, med

Please insert additional pages as applicable.

Drilling Contractor Waco Oil & Gas Co., Inc.
Address P.O. Box 397 City Glenville State WV Zip 26351

Logging Company Key Wireline
Address _____ City _____ State _____ Zip _____

Cementing Company Superior
Address _____ City _____ State _____ Zip _____

Stimulating Company Halliburton
Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Stephen E. Holloway Telephone 304-462-5347
Signature  Title Land Manger Date 02/22/2016

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

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FARM NAME

Trust Joice MacMillan

WELL NUMBER

1998

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 QUANTITIES AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC.)
	0		0		
Shale	2165	2215			Grey, soft
Lime	2215	2244			Grey, med
Shale	2244	2250			Grey, soft
B. Lime	2250	2325			Grey, med
B. Injun	2325	2483			Tan, med
Shale	2483	2910			Grey, soft
30'	2910	2950			Grey, soft
Shale	2950	2996			Grey, soft
Gordon	2996	3090			Grey/Brown, Hard
Siltstone	3090	3597			Hard
Balltown	3597	5342			Grey, Hard
Benson	5342	5365			Lt. Grey, Firm
Sd - Sly	5365	7370			Grey, Med
Gennessee	7370	7420			Brown, soft
Tully Lime	7420	7580			Grey, med
Marcellus	7580	7638			Brown, soft
Onondaga	7638	TD			Grey, hard

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