

PM 5/28/15

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

API 47-59-02241 County MINGO District HARVEY
Quad WILSONDALE Pad Name HRC 1 Field/Pool Name _____
Farm name HUNTINGTON REALTY CORP Well Number HRC 1
Operator (as registered with the OOG) TUG FORK DEVELOPMENT
Address 3930 BRANDYWINE DR City CATLETTSBURG State KY Zip 41129

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 99,712.801 Easting 489,508.74
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 1229.7 ^{GL} (374.601') 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) _____

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Date permit issued 2/3/14 Date drilling commenced 8/13/14 Date drilling ceased 9/8/14
Date completion activities began 11/9/14 Date completion activities ceased 11/10/14
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

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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 N
Salt water depth(s) ft 1500 Void(s) encountered (Y/N) depths N
Coal depth(s) ft NONE Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by: JK 9/10/15
AL 6/1/15
10/23/2015

API 47- 59 - 02241 Farm name HUNTINGTON REALTY CORP Well number HRC 1

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	38	NEW	N 36		DRIVE PIPE
Surface							
Coal	12 1/4	9 5/8	320	NEW	N 26	290, 62	Y 10 BBL
Intermediate 1	8 3/4	7		NEW	N 19	373, 62	Y 13 BBL
Intermediate 2							
Intermediate 3							
Production	6 1/4	4 1/2	3637	NEW	N 10.5		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	DRIVE PIPE						
Surface							
Coal	"A"	115	15.6	1.20	138	SURFACE	10
Intermediate 1	"A"/LITE POZ	50/185	15.6/9.9	1.20/1.84	400	SURFACE	72
Intermediate 2							
Intermediate 3							
Production	K BLEND	100	13.4	1.9	190	2400	72
Tubing							

Drillers TD (ft) 3671 Loggers TD (ft) 3682
 Deepest formation penetrated LOWER HURON 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 _____

9 5/8 1 @ 290
 7 1 @ 1870
 4 1/2 10 @ 3637 THAN 1 EVERY 90'

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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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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>LOWER HURNON</u>	<u>3578-3362</u> TVD	<u>3578-3362</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 185 psi Bottom Hole _____ psi DURATION OF TEST 72 hrs

OPEN FLOW Gas 215 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)
FILL	0	32	0		MINING REFUSE
SAND AND SHALE	32	950			
SAND	950	1264			SHOW OIL AND GAS
SAND AND SHALE	1264	1428			
SALT SAND	1428	1542			BRINE 1500
MAXOM	1542	1600			
SAND AND LIME	1600	1698			RED
LITTLE LIME	1698	1742			BLACK LIME
BIG LIME	1742	1910			WHITE LIME
INJUN	1910	1930			RED SAND AND SHALE
SLATE	1930	2510			
COFFE SHALE	2510	2522			
BEREA	2522	2612			BROKEN SAND WITH SHALE
BROWN SHALE	2612	2656			

Please insert additional pages as applicable.

Drilling Contractor MID AMERICAN DRILLING
Address PO BOX 327 City WILLIAMSBURG State KY Zip 40769

Logging Company NABORS
Address PO BOX 975682 City DALLAS State TX Zip 75397-5682

Cementing Company NABORS
Address PO BOX 975682 City DALLAS State TX Zip 75397-5682

Stimulating Company NABORS
Address PO BOX 975682 City DALLAS State _____ Zip 75397-5682

Please insert additional pages as applicable.

Completed by W. D. CUBBEDGE Telephone 606 922 5087
Signature _____ Title OWNER Date 5/25/15

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

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CONTINUED FROM PAGE 4
HRC 1 59 02241 LITHOLOGY

	TOP	BTM
WHITE SLATE	2656	3354
LOWER HURON	3354	3570 BROWN SHALE GAS 3440, 3540
WHIT SLATE	3570	3682 TD

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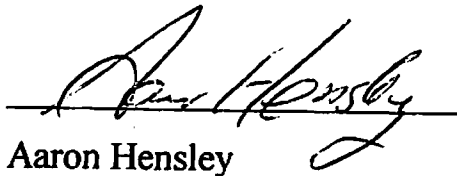
Tug Fork Development

HRC-3

API Number: 47-4959224

Date: 4/8/15 – 4/9/15

The HRC-3 pit water was transferred to the HRC-1 pit for discharge, due to the fact there was not an appropriate discharge area around the location. State Inspector Jeremy James told us to transfer the pit fluids to the HRC-1 for discharge.


Aaron Hensley

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