

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

API 47 - 41 - 02670 County Lewis District Freemans Creek
Quad Big Isaac Pad Name N/A Field/Pool Name Fink Storage
Farm name Beecher J. & Betty E. Rhoades Well Number AW-8945
Operator (as registered with the OOG) Dominion Transmission, Inc.
Address 445 West Main St. City Clarksburg State WV Zip 26301

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4330984.0563 Easting 538505.2745
Landing Point of Curve Northing N/A Easting N/A
Bottom Hole Northing 4330984.0563 Easting 538505.2745

Elevation (ft) 1,117.33' 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)
Brine/Polymer system: Salt, Xantham Gum, Soda Ash, Bicarbonate of Soda, Citric Acid
Office of Oil and Gas
OCT 11 2013
WV Department of Environmental Protection

Date permit issued June 3, 2013 Date drilling commenced July 15, 2013 Date drilling ceased September 4, 2013
Date completion activities began September 5, 2013 Date completion activities ceased September 5, 2013
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 185' Open mine(s) (Y/N) depths N/A
Salt water depth(s) ft 1,130' Void(s) encountered (Y/N) depths N/A
Coal depth(s) ft 275'-279' Cavern(s) encountered (Y/N) depths N/A
Is coal being mined in area (Y/N) No

Reviewed by:
11/22/2013

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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		10-3/4"	218'	New	N/A	N/A	Existing Casing
Surface		8-5/8"	1218'	New	N/A	N/A	Existing Casing
Coal							
Intermediate 1		7"	1885'	New	K-55/20#	N/A	Existing Casing
Intermediate 2							
Intermediate 3							
Production		4-1/2"	2118'	New	K-55/11.6#	N/A	Y
Tubing							
Packer type and depth set							

Comment Details 10-3/4", 8-5/8", and 7" were existing casing strings, re-worked well with 4-1/2"

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	Existing						
Surface	Existing						
Coal							
Intermediate 1	Existing						
Intermediate 2							
Intermediate 3							
Production	Class A	285	15.4 ppg	1.19	280	Surface	24 Hrs
Tubing							

Drillers TD (ft) 2141' Loggers TD (ft) 2141'
 Deepest formation penetrated Fifty Foot Sand Plug back to (ft) 2100'
 Plug back procedure Cleaned well out to original TD of 2141', pumped 5 bbls of cement, pulled up to 1854' and reverse circulated. WOC. Tripped in hole and verified top of cement plug at 1954' and drilled cement out to 2,100' inside 4-1/2" casing.

Kick off depth (ft) N/A

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Check all wireline logs run caliper density deviated/directional induction neutron resistivity gamma ray temperature sonic

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Well cored Yes No Conventional Sidewall

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 Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING Ran 49 joints of 4-1/2" K-55 11.6# casing, bowspring centralizers ran on joints: 3,6,9,12,15,18,21,24,27,30,33,36,39,42,45,48

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS Perforated storage zone, Gantz, with 20' gun with 4 shots per foot from 2049'-2069'

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	9/5/2013	2049'	2069'	80 shots	Gantz

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)
N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Please insert additional pages as applicable.

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Gantz - Storage Formation</u>	<u>2,049'-2,069'</u> TVD	<u>2,049'-2,069'</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface ^{680 (Storage Pressure)} psi Bottom Hole ^{640 (Storage Pressure)} psi DURATION OF TEST _____ hrs

OPEN FLOW Gas N/A mcfpd Oil N/A bpd NGL N/A bpd Water N/A bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	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	
Existing Storage Well	0		0		

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Please insert additional pages as applicable.

Drilling Contractor Key Energy Services WV Department of
Address PO Box 201858 City Dallas State TX ⁷⁵³²⁰ Environmental Protection

Logging Company Baker Hughes Atlas
Address Rt. 4 Box 640 City Buckhannon State WV Zip 26201

Cementing Company Nabors Completion and Production Services
Address PO Box 975682 City Dallas State TX Zip 75397

Stimulating Company N/A
Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by Jason S. Harshbarger Telephone 304-627-3242
Signature [Signature] Title Technical Specialist III Date 10/9/13