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

API 47 - 87 - 04714 County Roane District Smithfield
Quad Looneyville Pad Name _____ Field/Pool Name _____
Farm name Willard Thompson, Et Ux Well Number C.E. Lamb 13
Operator (as registered with the OOG) Raven Ridge Energy, LLC
Address 3230 Pennsylvania Avenue City Charleston State WV Zip 25302

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

Elevation (ft) 786 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)
Soap

Date permit issued 2/15/2012 Date drilling commenced 5/11/2012 Date drilling ceased 5/25/2012
Date completion activities began 11/30/2012 Date completion activities ceased 12/13/2013
Verbal plugging (Y/N) N 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 200' Open mine(s) (Y/N) depths _____
Salt water depth(s) ft 1,300' - 1,800' Void(s) encountered (Y/N) depths _____
Coal depth(s) ft None of Record Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) No

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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	14 1/4"	13 3/8"	30'	New	J-55	None	Yes - Cemented by Rig
Surface	12 1/4"	9 5/8"	350'	New	J-55	90'	Yes
Coal							
Intermediate 1	8 3/4"	7"	1705'	New	J-55	350'	Yes
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	1,800'	New	J-65	1000'	Yes
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	Class I	10 - Cemented by Hand				Ground Level	8
Surface	Class I	150	15.6	1.18	31.6 bbls.	Ground Level	8
Coal							
Intermediate 1	Class I	240	15.6	1.36	58.13	Ground Level	8
Intermediate 2							
Intermediate 3							
Production	Class I	400	15.6	1.36	96.88	600'	8
Tubing							

Drillers TD (ft) 2516' Loggers TD (ft) 2489'
 Deepest formation penetrated Coffee Shale/Berea Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) N/A

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 _____
4 1/2 Every 3 Joints - Total 3

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	6/16/12	1812'	1846'	18	Squaw
2	6/16/12				Set Plug at 1788'
3	6/16/2013	1728'	1778'	20	Big Injun

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	11/30/12	20	1750	2500	1390	25,000	385	0
2	11/30/12	20	2300	2800	1520	0	400	0

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS	
Squaw	1790	TVD 1805 MD
Big Injun	1730	1790

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 90 psi Bottom Hole _____ psi DURATION OF TEST 12 hrs

OPEN FLOW Gas 15 mcfpd Oil 2.5 bpd NGL _____ bpd Water 45 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)
Sand/Shale	0	260	0		
Sand	260	290			
Shale	290	400			
Sand	400	575			
Sand - Shale	575	1050			
Shale	1050	1110			
Sand - Shale	1110	1365			
Salt Sand	1365	1530			
Shale	1530	1560			
Maxton	1560	1640			
Big Lime	1650	1725			
Big Injun	1725	1790			
Sqaw	1790	1845			
Shale	1845	2220			

Please insert additional pages as applicable.

Drilling Contractor R & R Well Service
Address Ambler Ridge City Walton State WV Zip 25286

Logging Company Superior Well Services
Address 1650 Hackers Creek Road City Jane Lew State WV Zip 26378

Cementing Company Universal Well Services
Address 5 Hall Run Road City Buckhannon State WV Zip 26201

Stimulating Company Universal Well Services
Address 5 Hall Run Road City Buckhannon State WV Zip 26201

Please insert additional pages as applicable.

Completed by Danielle N. Boggs Telephone 304-344-9291
Signature *Danielle N. Boggs* Title Operations Manager Date 11/12/2013

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

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Lithology/ Formation	Top Depth Depth in Ft TVD	Bottom Depth in Ft TVD	Describe Rock Type Fluid Type
Coffee Shale	2220	2235	
Shale	2235	2489	

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