JR

WR-35
Rev. 8/23/13

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

OCT 31 2014

API 47 - 15 - 02888 County CLAY District UNION
Quad ELKHURST 7.5' Pad Name _____ Field/Pool Name _____
Farm name CONNER, CHESSIE, ET AL. Well Number J.S. COCHRAN #3
Operator (as registered with the OOG) RAVEN RIDGE ENERGY, LLC
Address 3230 PENNSYLVANIA AVE. 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 _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 1,237' GL Type of Well ■New □ Existing Type of Report ■Interim □Final Drilling Permit JR

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 6/26/2013 Date drilling commenced 11/2/2013 Date drilling ceased 11/30/2013
Date completion activities began N/A Date completion activities ceased N/A
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

Freshwater depth(s) ft 200' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1150' - 1650' Void(s) encountered (Y/N) depths N
Coal depth(s) ft N Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
_____

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API 47- 15 - 02888 Farm name CONNER, CHESSIE, ET AL. Well number J.S. COCHRAN #3

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 - 42 LBS	NONE	YES - CEMENTED BY RIG
Surface	12 1/4"	9 5/8"	377'	NEW	J-55 - 29 LBS	120'	YES
Coal							
Intermediate 1	8 3/4"	7"	1908'	NEW	J-55 - 17 LBS	335'	YES
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	2230'	NEW	J-55 10.5 LBS	NONE	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 - RIG				GROUND LEVEL	8
Surface	CLASS I	140	15.6	1.18	165.2	GROUND LEVEL	8
Coal							
Intermediate 1	CLASS I	275	14.7	1.36	374	GROUND LEVEL	8
Intermediate 2							
Intermediate 3							
Production	CLASS I	70	15.6	1.18	82.6	1650'	12
Tubing							

Drillers TD (ft) 2350' Loggers TD (ft) 2346'

Deepest formation penetrated SQUAW 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

WAS WELL COMPLETED AS SHOT HOLE ☐ Yes ■ No DETAILS

WAS WELL COMPLETED OPEN HOLE? ■ Yes ☐ No DETAILS FRAC/COMPLETION HAS NOT BEEN COMPLETED TO DATE.

WERE TRACERS USED ☐ Yes ☐ No TYPE OF TRACER(S) USED

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API 47- 15 - 02888 Farm name CONNER, CHESSIE, ET AL. Well number J.S. COCHRAN #3

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
	N/A				

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							

Please insert additional pages as applicable.

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API 47- 15 - 02888 Farm name CONNER, CHESSIE, ET AL. Well number J.S. COCHRAN #3

PRODUCING FORMATION(S)	DEPTHS	
NONE	TVD	MD

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☐ Open Flow OIL TEST ☐ Flow ☐ Pump

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

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

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
SAND & SHALE	0	1048'	0		
SALT SANDS	1048'	1646'			
MAUCH CHUNK	1646'	1832'			
LITTLE LIME	1832'	1871'			
BLUE MONDAY	1871'	1891'			
BIG LIME	1891'	2003'			
GREENBRIER GROUP	2003'	2062'			
BIG INJUN	2062'	2082'			
KEENER	2082'	2096'			
SQUAW	2096'	2116'			
SAND & SHALE	2116'	2350			

Please insert additional pages as applicable.

Drilling Contractor CUNNINGHAM ENERGY, LLC
Address 3230 PENNSYLVANIA AVENUE City CHARLESTON State WV Zip 25302

Logging Company NABORS COMPLETION & PRODUCTION
Address 1650 HACKERS CREEK ROAD City JANE LEW State WV Zip 26378

Cementing Company FORMATION CEMENTING, INC.
Address P.O. BOX 2667 City ZANESVILLE State OH Zip 43702

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

Please insert additional pages as applicable.

Completed by DANIELLE N. BOGGS Telephone 304-344-9291
Signature Danielle N. Boggs Title OPERATIONS MANAGER Date 10/2/2014

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

Received
Office of Oil & Gas
NOV 12 2014

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Rev (9-11)

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

DATE: 11/11/2014
API #: 47-033-05200

Farm name: Davis, Mike & Barbara
Operator Well No.: McKinley Unit 3H

LOCATION: Elevation: 1281'
Quadrangle: Big Isaac 7.5'

District: Union
County: Harrison
Latitude: 9090' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 14,400' Feet West of 80 Deg. 30 Min. 00 Sec.

Company: Antero Resources Corporation

Address: 1615 Wynkoop Street	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Denver, CO 80202	20" 94#	66'	66'	38 Cu. Ft. Grout
Agent: CT Corporation System				
Inspector: Sam Ward				
Date Permit Issued: 2/9/2009				
Date Well Work Commenced: 3/11/2009				
Date Well Work Completed: 3/11/2009				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ✓ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 66'				
Total Measured Depth (ft): 66'				
Fresh Water Depth (ft.): N/A				
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): N/A				
Void(s) encountered (N/Y) Depth(s) No				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)

Producing formation N/A Pay zone depth (ft) N/A
Gas: Initial open flow -------- MCF/d Oil: Initial open flow ------ Bbl/d
Final open flow ---------- MCF/d Final open flow ---------- Bbl/d
Time of open flow between initial and final tests ---------- Hours
Static rock Pressure -------- psig (surface pressure) after -------- Hours

Second producing formation _____ Pay zone depth (ft) _____
Gas: Initial open flow _____ MCF/d Oil: Initial open flow _____ Bbl/d
Final open flow _____ MCF/d Final open flow _____ Bbl/d
Time of open flow between initial and final tests _____ Hours
Static rock Pressure _____ psig (surface pressure) after _____ Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Ashlei Steele
Signature

11-11-14
Date

Received
Office of Oil & Gas
NOV 12 2014

33-05200

Were core samples taken? Yes_____ No X

Were cuttings caught during drilling? Yes_____ No X

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list No

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

N/A- Only Conductor Set

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			

N/A

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Office of Oil & Gas
NOV 12 2014

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

DATE: 11/11/2014
API #: 47-033-05201

Farm name: Davis, Mike & Barbara Operator Well No.: McKinley Unit 4H

LOCATION: Elevation: 1281' Quadrangle: Big Isaac 7.5'

District: Union County: Harrison
Latitude: 9080' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 14,400' Feet West of 80 Deg. 30 Min. 00 Sec.

Company: Antero Resources Corporaiton

Address: 1615 Wynkoop Street	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Denver, CO 80202	20" 94#	40'	40'	38 Cu. Ft. Grout
Agent: CT Corporation System				
Inspector: Sam Ward				
Date Permit Issued: 2/9/2009				
Date Well Work Commenced: 11/20/2009				
Date Well Work Completed: 11/20/2009				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ✓ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 40'				
Total Measured Depth (ft): 40'				
Fresh Water Depth (ft.): N/A				
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): N/A				
Void(s) encountered (N/Y) Depth(s) No				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)
Producing formation N/A Pay zone depth (ft) N/A
Gas: Initial open flow -------- MCF/d Oil: Initial open flow ------ Bbl/d
Final open flow ---------- MCF/d Final open flow ---------- Bbl/d
Time of open flow between initial and final tests ---------- Hours
Static rock Pressure --------- psig (surface pressure) after -------- Hours

Second producing formation_____ Pay zone depth (ft)_____
Gas: Initial open flow_____MCF/d Oil: Initial open flow_____Bbl/d
Final open flow_____MCF/d Final open flow _____Bbl/d
Time of open flow between initial and final tests_____Hours
Static rock Pressure_____psig (surface pressure) after _____Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Ashlei Steele 11-11-14
Signature Date

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Office of Oil & Gas
NOV 12 2014

33.05201

Were core samples taken? Yes_____ No X

Were cuttings caught during drilling? Yes_____ No X

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list No

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

N/A- Only Conductor Set

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			
N/A			

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NOV 12 2014

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

DATE: 11/11/2014
API #: 47-033-05435

Farm name: Davis, Mike & Barbara
Operator Well No.: McKinley Unit 7

LOCATION: Elevation: 1281'
Quadrangle: Big Isaac 7.5'

District: Union
County: Harrison
Latitude: 10,010' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 14,415' Feet West of 80 Deg. 30 Min. 00 Sec.

Company: Antero Resources Corporation

Address: 1615 Wynkoop Street	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Denver, CO 80202	20" 94#	20'	20'	*Back filled with dirt
Agent: CT Corporation System				
Inspector: Sam Ward				
Date Permit Issued: 6/15/2010				
Date Well Work Commenced: 6/16/2010				
Date Well Work Completed: 6/16/2010				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ✓ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 20'				
Total Measured Depth (ft): 20'				
Fresh Water Depth (ft.): N/A				
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): N/A				
Void(s) encountered (N/Y) Depth(s) No				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)
Producing formation N/A Pay zone depth (ft) N/A
Gas: Initial open flow -------- MCF/d Oil: Initial open flow ------ Bbl/d
Final open flow ---------- MCF/d Final open flow ---------- Bbl/d
Time of open flow between initial and final tests ---------- Hours
Static rock Pressure -------- psig (surface pressure) after -------- Hours

Second producing formation_____ Pay zone depth (ft)_____
Gas: Initial open flow_____MCF/d Oil: Initial open flow_____Bbl/d
Final open flow_____MCF/d Final open flow _____Bbl/d
Time of open flow between initial and final tests_____Hours
Static rock Pressure_____psig (surface pressure) after _____Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Ashlie Steele
Signature

11-11-14
Date

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Office of Oil & Gas
NOV 12 2014

33.05435

Were core samples taken? Yes_____ No X

Were cuttings caught during drilling? Yes_____ No X

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list No

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

N/A- Only Conductor Set

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			
N/A			

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Office of Oil & Gas
NOV 12 2014

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

DATE: 11/11/2014
API #: 47-033-05436

Farm name: Davis, Mike & Barbara Operator Well No.: McKinley Unit 8

LOCATION: Elevation: 1281' Quadrangle: Big Isaac 7.5'

District: Union County: Harrison
Latitude: 10,000' Feet South of 39 Deg. 12 Min. 30 Sec.
Longitude 14,415' Feet West of 80 Deg. 30 Min. 00 Sec.

Company: Antero Resources Corporation

Address: 1615 Wynkoop Street	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Denver, CO 80202	20" 94#	20'	20'	*Back filled with dirt
Agent: CT Corporation System				
Inspector: Sam Ward				
Date Permit Issued: 6/15/2010				
Date Well Work Commenced: 1/6/2011				
Date Well Work Completed: 1/6/2011				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ☑ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 20'				
Total Measured Depth (ft): 20'				
Fresh Water Depth (ft.): N/A				
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): N/A				
Void(s) encountered (N/Y) Depth(s) No				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)
Producing formation N/A Pay zone depth (ft) N/A
Gas: Initial open flow -------- MCF/d Oil: Initial open flow ------ Bbl/d
Final open flow ---------- MCF/d Final open flow ---------- Bbl/d
Time of open flow between initial and final tests ---------- Hours
Static rock Pressure --------- psig (surface pressure) after -------- Hours

Second producing formation_____ Pay zone depth (ft)_____
Gas: Initial open flow_____MCF/d Oil: Initial open flow_____Bbl/d
Final open flow_____MCF/d Final open flow _____Bbl/d
Time of open flow between initial and final tests_____Hours
Static rock Pressure_____psig (surface pressure) after _____Hours

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Ashli Steele 11-11-14
Signature Date

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Office of Oil & Gas
NOV 12 2014

33-05436

Were core samples taken? Yes_____ No X

Were cuttings caught during drilling? Yes_____ No X

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list No

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

N/A- Only Conductor Set

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered:	Top Depth	/	Bottom Depth
Surface:			
N/A			

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Office of Oil & Gas
NOV 12 2014

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

DATE: 11/11/2014
API #: 47-033-05540

Farm name: Haught, Robert J. & Mary Post et al Operator Well No.: R. Haught South Unit 1

LOCATION: Elevation: 1060' Quadrangle: Salem 7.5'

District: Tenmile County: Harrison
Latitude: 10,964' Feet South of 39 Deg. 20 Min. 00 Sec.
Longitude 12,326' Feet West of 80 Deg. 30 Min. 00 Sec.

Company: Antero Resources Corporation

Address: 1615 Wynkoop Street	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Denver, CO 80202	20" 94#	40'	40'	38 Cu. Ft. Grout
Agent: CT Corporation System				
Inspector: Sam Ward				
Date Permit Issued: 4/19/2011				
Date Well Work Commenced: 4/21/2011				
Date Well Work Completed: 4/21/2011				
Verbal Plugging: N/A				
Date Permission granted on: N/A				
Rotary ✓ Cable ☐ Rig ☐				
Total Vertical Depth (ft): 40'				
Total Measured Depth (ft): 40'				
Fresh Water Depth (ft.): N/A				
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? No				
Coal Depths (ft.): N/A				
Void(s) encountered (N/Y) Depth(s) No				

OPEN FLOW DATA (If more than two producing formations please include additional data on separate sheet)
Producing formation N/A Pay zone depth (ft) N/A
Gas: Initial open flow -------- MCF/d Oil: Initial open flow ------ Bbl/d
Final open flow ---------- MCF/d Final open flow ---------- Bbl/d
Time of open flow between initial and final tests ---------- Hours
Static rock Pressure --------- psig (surface pressure) after --------- Hours

Second producing formation_____ Pay zone depth (ft)_____
Gas: Initial open flow_____MCF/d Oil: Initial open flow_____Bbl/d
Final open flow_____MCF/d Final open flow _____Bbl/d
Time of open flow between initial and final tests_____Hours
Static rock Pressure_____psig (surface pressure) after _____Hours

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete.

Ashli Steele 11-11-14
Signature Date

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Office of Oil & Gas
NOV 12 2014

33-05540

Were core samples taken? Yes_____ No X

Were cuttings caught during drilling? Yes_____ No X

Were Electrical, Mechanical or Geophysical logs recorded on this well? If yes, please list No

NOTE: IN THE AREA BELOW PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF THE TOPS AND BOTTOMS OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE FROM SURFACE TO TOTAL DEPTH.

Perforated Intervals, Fracturing, or Stimulating:

N/A- Only Conductor Set

Plug Back Details Including Plug Type and Depth(s): N/A

Formations Encountered:	Top Depth /	Bottom Depth
Surface:		
N/A		

WR-35
Rev. 8/23/13

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

API 47- 39 - 02777 W County Kanawha District Union
Quad Pocatalico Pad Name Field/Pool Name Braden
Farm name Braden, Richard W. Well Number #1
Operator (as registered with the OOG) Shale Gas Production, LLC
Address 929 Charleston Road City Spencer State WV Zip 25276

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 519577 NAD83 4253180 UTM NAD 83 Easting 1757795 NAD83 0436407 UTM NAD83
Landing Point of Curve Northing Easting
Bottom Hole Northing Easting

Elevation (ft) 798 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 05/19/2014 Date drilling commenced 5/16/77 Date drilling ceased 6/6/77 8/14/2014
Date completion activities began 9/24/2014 Date completion activities ceased 9/24/2014
Verbal plugging (Y/N) NO 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 30 FT Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1210 FT Void(s) encountered (Y/N) depths No
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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DEC 16 2014
WV Department of
Environmental Pro...

Reviewed by: R.F.

WR-35
Rev. 8/23/13

API 47- 39 - 02777 Farm name Braden, Richard W. Well number Braden #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							
Surface	N/A	9 5/8"	292	Existing	H40	N/A	N/A CTS
Coal							
Intermediate 1	N/A	7"	2320	Existing	K55 20#	N/A	N/A 185 cuft
Intermediate 2							
Intermediate 3							
Production	6 1/4"	4 1/2"	4115	New	11.6 #	2	
Tubing	N/A	2 3/8"	4275	Existing	J55 4.6 #	N/A	N/A
Packer type and depth set							

Comment Details clean out existing hole, cemented 4 1/2" production casing, and removed tubing from hole.

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft^3/sks)	Volume ~~(ft^3)~~ BBL	Cement Top (MD)	WOC (hrs)
Conductor							
Surface	N/A	N/A	N/A	N/A	N/A	CTS	N/A
Coal							
Intermediate 1	N/A	N/A	N/A	N/A	N/A	CTS	N/A
Intermediate 2							
Intermediate 3							
Production	Stronglite 250	150	12.3	2.41	58.0	727	24hrs
Tubing							

Drillers TD (ft) 4130 Loggers TD (ft) 4130
Deepest formation penetrated Brown Shale 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" N/A
7" N/A
4 1/2" 3 centralizers

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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API 47- 39 - 02777 Farm name Braden, Richard W. Well number Braden #1

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	9/24/2014	3714	4038	40	brown, gray, and brown shale
2	9/24/2014	3308	3680	35	soft, brown, and gray shale

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)	20% HCL Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	9/24/2014	50262 SCF	2504	2690	1291	N/A	875 gallons	1000826 SCF
2	9/24/2014	50880 SCF	2534	2640	1848	N/A	850 gallons	1001364 SCF

Please insert additional pages as applicable.

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API 47- 39 - 02777 Farm name Braden, Richard W. Well number Braden #1

PRODUCING FORMATION(S)	DEPTHS TVD	DEPTHS MD
soft shale	3308	3315
brown shale	3315	3345
gray shale	3345	3700
brown shale	3700	3905
	3905	3990 gray scale
	3990	4038 brown shale

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☒ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface 420 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 94 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY ☐ Estimated ☒ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
	0		0		
					see attachment A for formation info

Please insert additional pages as applicable.

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Drilling Contractor Kanawha Valley Drilling
Address 929 Charleston Road City Spencer State WV Zip 25276

Logging Company Nabors Completion and Production Services Co
Address 515 West Greens Road, Suite 100 City Houston State TX Zip 77067

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

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

Please insert additional pages as applicable.

Completed by Ryan Fields Telephone 304-927-5033
Signature Ryan Fields Title office assistant Date 10/28/2014

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

Braden #1 47-39-02777 Attachment A

Formation	TOP (TVD)	BOTTOM (TVD)	TOP (MD)	BOTTOM (MD)	Remarks
			0	0	
Top Soil	0	5	0	5	
Red Rock	5	15	5	15	
Sand	15	30	15	30	
Slate	30	295	30	295	30', water
Slate and Sand	295	365	295	365	
Sand	365	485	365	485	
Slate and Shale	485	1120	485	1120	
Salt Sand	1120	1485	1120	1485	1210', water
Slate	1485	1695	1485	1695	
Big Lime	1695	1830	1695	1830	
Big Injun	1830	1880	1830	1880	
Slate	1880	2285	1880	2285	
Berea	2285	2300	2285	2300	
Slate	2300	2789	2300	2789	
Soft Shale	2789	3315	2789	3315	
Brown Shale	3315	3345	3315	3345	
Grey Shale	3345	3700	3345	3700	
Brown Shale	3700	3905	3700	3905	
Grey Shale	3905	3990	3905	3990	
Brown Shale	3990	4050	3990	4050	
Grey Shale	4050	4190	4050	4190	
Brown Shale	4190	4220	4190	4220	
Grey Shale	4220	4307	4220	4307	

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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- 39 - 06366 County Kanawha District Union
Quad St. Albans Pad Name _____ Field/Pool Name WVSU
Farm name WVSU Board of Governors Well Number #2
Operator (as registered with the OOG) Reserve Oil and Gas, Inc.
Address 929 Charleston Road City Spencer State WV Zip 25276

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 502455 NAD83 4247963 UTM NAD83 Easting 1746960 NAD83 0432496 UTM NAD83
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) 595 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 05/20/2014 Date drilling commenced 9/3/2014 Date drilling ceased 9/15/2014
Date completion activities began 10/1/2014 Date completion activities ceased 10/1/2014
Verbal plugging (Y/N) No 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 70', 95' Open mine(s) (Y/N) depths No
Salt water depth(s) ft N/A Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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Reviewed by:
R.F.

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API 47- 39 - 06366 Farm name WVSU Board of Governors Well number WVSU #2

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	17 1/2"	13 3/8"	20'	New	40 #	No	yes
Surface	12 1/4"	9 5/8"	336'	New	26 #	1	yes 6 bbl to pit
Coal							
Intermediate 1	8 7/8"	7"	1760'	New	17#	1 @ 295'	yes 5 bbl to pit
Intermediate 2							
Intermediate 3							
Production	6 1/2"	4 1/2"	4441'	New	11.6#	NA	
Tubing							
Packer type and depth set							

Comment Details

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft³/sks)	Volume ~~(ft³)~~ BBL	Cement Top (MD)	WOC (hrs)
Conductor	Type 1	100	15.6	1.18	21.0	0 (Surface)	24 hrs
Surface	Type 1	130	15.6	1.18	79.0	0 (Surface)	24 hrs
Coal							
Intermediate 1	Type 1	215	13.8	1.83	71.8	0 (Surface)	24 hrs
Intermediate 2							
Intermediate 3							
Production	Stronglite 250	150	12.3	2.34	69.0	785	24 hrs
Tubing							

Drillers TD (ft) 4455 Loggers TD (ft) 4443
Deepest formation penetrated Devonian Shale 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
13 3/8" :
9 5/8" : 1
7" : 1
4 1/2" : N/A

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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API 47- 39 - 06366 Farm name WVSU Board of Governors Well number WVSU #2

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
1	10/1/2014	3937	4257	20	Devonian Shale
2	10/1/2014	3326	3821	20	Huron, Devonian Shale

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) SCF/MIN	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls) 15% HCL	Amount of Nitrogen/other (units)
1	10/1/2014	43,643	2347	2550	1564	N/A	250gal	501,363 SCF
2	10/1/2014	43,643	1808	1880	956	N/A	750gal	1,000,992 SCF

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS			
Huron Shale	3326	TVD	3795	MD
Devonian Shale	3795		4257	

Please insert additional pages as applicable.

GAS TEST ☐ Build up ☐ Drawdown ☒ Open Flow OIL TEST ☐ Flow ☐ Pump

SHUT-IN PRESSURE Surface 470 psi Bottom Hole _____ psi DURATION OF TEST 24 hrs

OPEN FLOW Gas 84 mcfpd Oil _____ bpd NGL _____ bpd Water _____ bpd GAS MEASURED BY ☐ Estimated ☒ Orifice ☐ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT 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_2S, ETC)
	0		0		
					see attachment A for formation info

Please insert additional pages as applicable.

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Please insert additional pages as applicable.

Completed by Ryan Fields Telephone 304-927-5033
Signature [signature] Title office assistant Date 10/23/2014

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Formation	TOP (TVD)	BOTTOM (TVD)	TOP (MD)	BOTTOM (MD)	Remarks
K.B to G.L.			0	7	
Fill	0	18	7	25	
Clay	18	44	25	51	
Rock	44	83	51	90	70', Hole Damp
Sand & Shale	83	918	90	925	95', 1/4" Stream
Salt Sand	918	1428	925	1435	
Little Lime	1428	1448	1435	1455	
Pencil Cave Shale	1448	1452	1455	1459	
Big Lime	1452	1645	1459	1652	
Injun	1645	1673	1652	1680	
Grey Shale	1673	1793	1680	1800	
Sand & Shale	1793	2119	1800	2126	
Brea	2119	2131	2126	2138	
Silt, Stone, and Sand	2131	2973	2138	2980	
Huron	2973	3788	2980	3795	
Devonian Shale	3788	4448	3795	4455	

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