

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

API 47-011-01004 County Cabell District Grant
Quad Milton WV 7.5' Pad Name N/A Field/Pool Name N/A
Farm name Kenner Well Number 11
Operator (as registered with the OOG) Keyrock Energy LLC
Address P.O. Box 2223 City Johnson City State TN Zip 37605

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 508,179.851 Easting 1,658,599.605
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing Same Easting Same

Elevation (ft) 959 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)
N/A

Date permit issued 10-15-2018 Date drilling commenced 12-3-2019 Date drilling ceased 12-11-2019
Date completion activities began 2-28-2019 Date completion activities ceased 2-28-2019
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 450', 610-620', 925' Open mine(s) (Y/N) depths None
Salt water depth(s) ft 1510-1525', 1600', 1950', 2070' Void(s) encountered (Y/N) depths None
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) No

Reviewed by:
AK 3-20-2019

Reviewed

WR-35
Rev. 8/23/13

API 47-011 - 01004

Farm name Kenner

Well number 11

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	8.875"	7"	935'	New			Yes
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	6.5"	4.5"	2,820'	New			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							
Surface	Type I/II Portland	165	15.6	1.2	18.72	Surface	8
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production	Type I/II Portland	68	14.2	1.31	18.6	1014'	8
Tubing							

Drillers TD (ft) 2700

Loggers TD (ft) 2704

Deepest formation penetrated Devonian Shale

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 7" at 925'

4 1/2" at 2,810', 2,742', 2,674', 2,640', 2,572', 2,504'

WAS WELL COMPLETED AS SHOT HOLE Yes No

DETAILS 20 shots, 10 shots per foot from 2,606-2,616'

WAS WELL COMPLETED OPEN HOLE? Yes No

DETAILS _____

WERE TRACERS USED Yes No

TYPE OF TRACER(S) USED _____

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API 47- 011 - 01004 Farm name Kenner Well number 11

PRODUCING FORMATION(S)	DEPTHS
Berea Sand	TVD 2606-2616 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	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	376	0	376	Surface sand and shale formations
Sand	376	470	376	470	White Sand; wet
Shale	470	596	470	596	Gray shale
Sand	596	630	596	630	White Sand; wet
Shale & Silt	630	1000	630	1000	Gray Shale
Shale	1000	1470	1000	1470	Primarily shale with minor silt beds
Salt Sand	1470	1660	1470	1660	Salt Sand; wet
Shale	1660	1780	1660	1780	Gray shale
Little & Big Limes	1780	1990	1780	1990	Limestone. Water throughout; oil at base.
Shale	1990	2066	1990	2066	Gray Shale
Injun Sand	2066	2146	2066	2146	Clean sand; wet
Shale	2146	2606	2146	2606	Gray Shale
Berea Sand	2606	2617	2606	2617	Tight gray sand
Devonian Sh.	2617	TD	2617	TD	Dark gray shale

Please insert additional pages as applicable.

Drilling Contractor Cheyenne Drilling
Address 60 Bosco Tipple Rd City Hueysville State KY Zip 41640

Logging Company Keystone Wireline
Address 380 Southpoint Blvd., Plaza 11, Suite 405 City Canonsburg State PA Zip 15317

Cementing Company C&J Energy Services
Address 580 Hawthorn Dr City Norton State VA Zip 24273

Stimulating Company Reliance Well Services
Address 1250 Tower Lane City Erie State PA Zip 16505

Please insert additional pages as applicable.

Completed by Morgan Pate Telephone (423) 276-1116
Signature [Signature] Title Geologist Date 3/15/19

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