



west virginia department of environmental protection

Office of Oil and Gas
601 57th Street, S.E.
Charleston, WV 25304
(304) 926-0450
fax: (304) 926-0452

Jim Justice , Governor
Austin Caperton , Cabinet Secretary
www.dep.wv.gov

Monday, January 30, 2017
WELL WORK PERMIT
Coal Bed Methane Well / Plugging

CNX GAS COMPANY LLC (A)
POST OFFICE BOX 1248

JANE LEW, WV 263786506

Re: Permit approval for RLHC - 310 BR
47-081-01470-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926- 0450.

James A. Martin
Chief

Operator's Well Number: RLHC - 310 BR
Farm Name: CLEAR FORK COAL CO
U.S. WELL NUMBER: 47-081-01470-00-00
Coal Bed Methane Well / Plugging
Date Issued: 1/30/2017

Promoting a healthy environment.

02/03/2017

PERMIT CONDITIONS

West Virginia Code §22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

CONDITIONS

1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

8101470A

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

4) Well Type: Oil ____/ Gas X/ Liquid injection ____/ Waste disposal ____/
(If "Gas, Production X or Underground storage ____) Deep ____/ ShallowX

5) Location: Elevation 2240 ft. Watershed Workman Creek of Clear Fork
District Clear Fork County Raleigh Quadrangle Pax

6) Well Operator CNX Gas Company LLC 7) Designated Agent Anthony Kendziora
Address 627 Claypool Hill Mall Road Address One Dominion Drive
Cedar Bluff, VA 24609 Jane Lew, WV 26378

8) Oil and Gas Inspector to be notified 9) Plugging Contractor
Name Gary Kennedy Name Skyline Contracting Inc.
Address PO-Box 268 252 Circle Ave Address PO Box 663
Nimitz, WV 25978 Rainelle, WV 25962 Oakwood, VA 24631

10) Work Order: The work order for the manner of plugging this well is as follows:
see attached plugging procedures

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Office of Oil and Gas

NOV 09 2016

WV Department of
Environmental Protection

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WV Department of
Environmental Protection
Date 11/16

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector

Gary Kennedy

02/03/2017

API 47-081-01470 Plugging Procedure

Well # RLHC-310BR

Note: This is a Pinnate Style horizontal well with a total of 14,103' of 4-3/4" horizontal hole.

1. Move in rig up and verify TD of vertical section (1430').
2. Calculate volume of vertical hole and 14,103' of 4-3/4" horizontal hole. Rig up to 7" casing and pump calculated volume of water to load the entire hole.
3. Set a cast iron bridge plug at the bottom of the 7" casing. (Approximately 1279')
4. Run tubing to 1279' and set Class A cement plug from 1279' to 700'. Spot 100' 6% gel spacer from 700' to 600'. Cement from 600' to surface with Class A cement.
5. Install steel plugging monument with API# and date.
6. Reclaim Location



WR-35

Pinnate Drilling Process

DATE: 10/29/2008
API#: 4708101470C

State of West Virginia
Division of Environmental Production
Section of Oil and Gas

32680
310B

AP

Well Operator's Report of Well Work

Farm Name Rowland Land Company

Operator Well No.: RLHC-310BR

LOCATION Elevation: 2240

Quadrangle: Pax, WV

4 3/4" Laterals

District: Clear Fork County: Raleigh
Latitude: 9670 Feet South of 37 Deg. 55 Min. 00 Sec.
Longitude: 11270 Feet West of 81 Deg. 20 Min. 00 Sec.

Company:

Penn Virginia Oil & Gas Corporation	Casing and Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: <u>Seven Sheridan Square, Suite 200</u>	<u>13 3/8"</u>	<u>30'</u>	<u>30'</u>	<u>11.80 Cu Ft</u>
<u>Kingsport, TN 37660</u>	<u>9 5/8"</u>	<u>550'</u>	<u>550'</u>	<u>224.2 Cu Ft</u>
Agent: <u>Bryant Bowman</u>	<u>7"</u>	<u>1289'</u>	<u>1289'</u>	<u>236 Cu Ft</u>
Inspector: <u>Terry Urban</u>				
Date Permit Issued: <u>01/11/2008</u>				
Date Well Work Commenced: <u>02/08/2008</u>				
Date Well Work Completed: <u>04/19/2008</u>				
Verbal Plugging:				
Date Permission granted on:				
Rotary X <input type="checkbox"/> Cable <input type="checkbox"/> Rig <input type="checkbox"/>				
Total Depth (feet): <u>1,430</u>				
Fresh Water Depth (ft): <u>None Reported</u>				
Salt Water Depth (ft): <u>None Reported</u>				
is coal being mined in area (N/Y)? <u>Y</u>				
Coal Depths (ft): <u>222'; 391'; 490'; 1327'; 1335'</u>				

OPEN FLOW DATA

Producing formation Lower Beckley Pay zone depth (ft) 1327 - 1330

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

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANE, TEC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: James Burns
By: JAMES R. BURNS
Date: 10/29/08

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 NOV 02 2008
 WV Department of Environmental Protection
 02/03/2017

FORM WR-35R
(REVERSE)

PERMIT # 4708101470C
WELL #: FRLHC-310BR

DETAILS OF PERFORATIONS, FRACTURING, OR PHYSICAL CHANGE, ETC.

<u>FORMATIONS</u>	<u>TOP</u>	<u>BOTTOM</u>	<u>REMARKS</u>
Sand/Shale	0000	0222	
Coal	0222	0228	
Sand/Shale	0228	0391	
Coal	0391	0393	
Sand/Shale	0393	0490	
Coal	0490	0493	
Sand/Shale	0493	1327	
Lower Beckley	1327	1330	Upper Split - Horizontal Target
Sandy Shale	1330	1335	
Lower Beckley	1335	1337	Lower Split
Sand/Shale	1337	1430	TD Vertical BR Well



WW-4A
Revised 6-07

1) Date: _____
2) Operator's Well Number _____
RLHC-310BR

3) API Well No.: 47 - 081 - 001470

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
NOTICE OF APPLICATION TO PLUG AND ABANDON A WELL

4) Surface Owner(s) to be served:		5) (a) Coal Operator	
(a) Name	Clear Fork Coal Company	Name	Republic Energy, Inc.
Address	P O Box 265 Julian, WV 25529-0265	Address	4101 Slate Drive Scarbro, WV 25917
(b) Name	_____	(b) Coal Owner(s) with Declaration	_____
Address	_____	Name	_____
		Address	_____
(c) Name	_____	Name	_____
Address	_____	Address	_____
6) Inspector	Gary Kennedy	(c) Coal Lessee with Declaration	_____
Address	PO Box 268 252 Circle Ave, Nimitz, WV 25978 Fairbair, WV 25962	Name	_____
Telephone	304-382-8402	Address	_____

TO THE PERSONS NAMED ABOVE: You should have received this Form and the following documents:

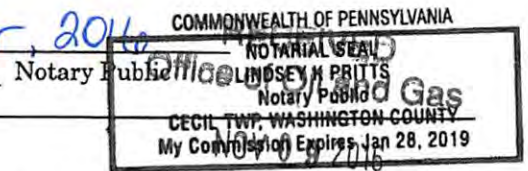
- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverse side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator CNX Gas Company LLC
 By: [Signature]
 Its: Permitting Manager
 Address: 627 Claypool Hill Mall Road
 Cedar Bluff, VA 24609
 Telephone: 276-596-5137

Subscribed and sworn before me this 3 day of November, 2016
[Signature]
 My Commission Expires January 28, 2019



Oil and Gas Privacy Notice

The Office of Oil and Gas processes your personal information, such as name, address and phone number, as a part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at depprivacyofficer@wv.gov.

WW-9
(2/15)

API Number 47 - 081 - 01470
Operator's Well No. RLHC-310BR

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name CNX Gas Company LLC OP Code 494458046

Watershed (HUC 10) 0507010102 Quadrangle Pax

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes No

Will a pit be used? Yes No

If so, please describe anticipated pit waste: _____

Will a synthetic liner be used in the pit? Yes No If so, what ml.? _____

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection (UIC Permit Number 2D0550319)
- Reuse (at API Number _____)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain _____)

Will closed loop system be used? If so, describe: a pumper truck with a flow back tank will be used in lieu of a pit.

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. _____

-If oil based, what type? Synthetic, petroleum, etc. _____

Additives to be used in drilling medium? _____

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. _____

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) _____

-Landfill or offsite name/permit number? _____

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto 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. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature [Signature]

Company Official (Typed Name) Matt Hanley

Company Official Title Manager Gas Permitting

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Office of Oil and Gas

Subscribed and sworn before me this 3 day of November, 2016

[Signature]
My commission expires January 28, 2019

NOV 09 2016
WV DEPARTMENT OF ENVIRONMENTAL PROTECTION
NOTARIAL SEAL
LINDSEY K. PRITTS
Notary Public
CECIL TWP, WASHINGTON COUNTY
My Commission Expires Jan 28, 2019

02/03/2017

CNX Gas Company LLC

Proposed Revegetation Treatment: Acres Disturbed 1.5 Prevegetation pH to be determined

Lime based on pH Tons/acre or to correct to pH 7

Fertilizer type ¹⁰⁻²⁰⁻²⁰ _____

Fertilizer amount 550 lbs/acre

Mulch 2 Tons/acre

Seed Mixtures

Temporary

Permanent

Seed Type	lbs/acre	Seed Type	lbs/acre
orchard grass	25		
birdsfoot trefoil	15		
lidino clover	10		

Attach:

Drawing(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided)

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *[Signature]*

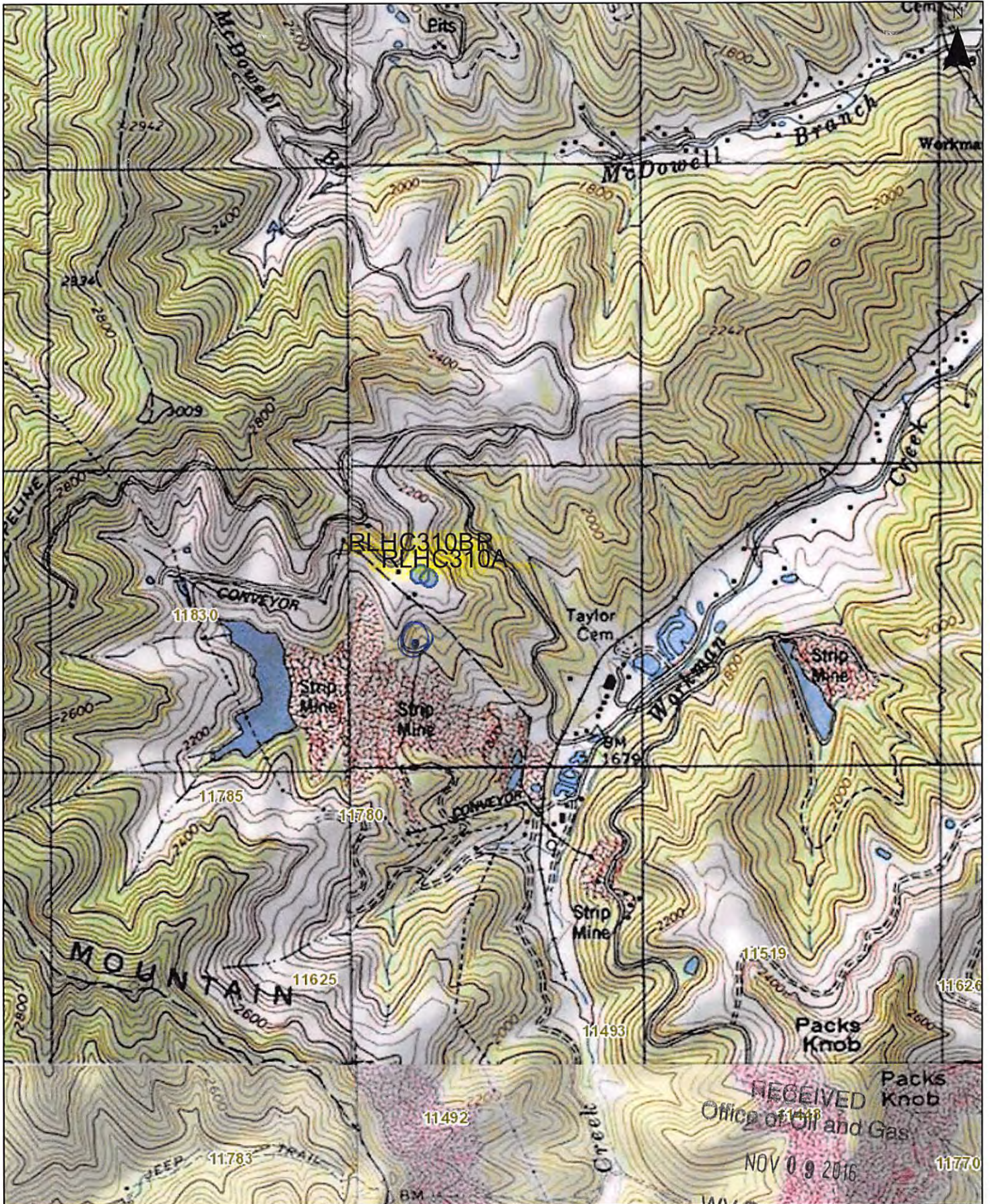
Comments: _____

Title: Inspector

Date: 11/2/16

Field Reviewed? () Yes () No

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02/03/2017



Legend

CNX Upper Devonian Well Pad Centers - Proposed Labels	<i>SLK</i>
CNX Upper Devonian Well Laterals - Drilled Labels	
CNX Upper Devonian Well Laterals - Proposed Labels	

0 45 90 135 170

WV Department of Environmental Protection

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CONSOLE ENERGY
AGIS Web Map

This product was generated by CONSOL Energy's WEB Map. Intended for Internal Use Only.

RLHC0203/BA7

WW-7
8-30-06



West Virginia Department of Environmental Protection
Office of Oil and Gas

WELL LOCATION FORM: GPS

API: 47-081-01470 WELL NO.: RLHC-310BR

FARM NAME: Clear Fork Coal Company

RESPONSIBLE PARTY NAME: CNX Gas Company LLC

COUNTY: Raleigh DISTRICT: Clear Fork

QUADRANGLE: Pax

SURFACE OWNER: Clear Fork Coal Company

ROYALTY OWNER: Rowland Land Company

UTM GPS NORTHING: 4,193,412.62

UTM GPS EASTING: 467,241.6 GPS ELEVATION: 2240 ft.

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.
2. Accuracy to Datum – 3.05 meters
3. Data Collection Method:

Survey grade GPS : Post Processed Differential

Real-Time Differential

Mapping Grade GPS : Post Processed Differential

Real-Time Differential

4. Letter size copy of the topography map showing the well location.

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

[Signature]
Signature

Foreman Production
Title

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Environmental Protection

02/03/2017

11270'

LATITUDE 37°55'00"



PENN VIRGINIA OIL & GAS

RLHC-310BR
SCALE: 1" = 2000'

WELL LOCATION GEOMETRY

Line	Well Number		Bearing	Distance
	From	To		
L1	1159	RLHC-310A	N25°51'21"E	2730.37'
L2	RLHC-310A	RLHC-310BR	N45°04'41"W	359.59'
L3	RLHC-310BR	Block Gum	N79°25'31"E	4560.20'
L4	Block Gum	1159	S56°38'41"W	6513.70'

PROPOSED WELL COORDINATES

N:324140.29
E:1892531.69
WV SOUTH ZONE
NAD 27

PROPOSED DATE OF DRILLING COMPLETION 1-2008
PROPOSED DATE OF STIMULATION (IF ANY) None

ROWLAND LAND COMPANY

5013/8860
Fee ±8962 Acres
TM 6, par 11

McDowell Branch

WESTERN POCAHONTAS PROPERTIES, LTD
Coal ±357 ac. VARIES
SURFACE OWNERSHIP
TM 15, par 1, 2, 1.2, 2.2, 7.2, 8.2, 10, 8
TM 17, par 24, 25, 26

EMERGEN RESOURCES CORP
KERN-MICROSE OIL & GAS, LP

CLEAR FORK COAL COMPANY
Surface & Coal 49.1 ac.
TM17, par 19

SOUTHERN LAND COMPANY
oil & gas

CLEAR FORK COAL CO.
Surface 25.97 ac.
TM17, par 5

SOUTHERN LAND COMPANY
coal, oil & gas

GRID NORTH

PROPOSED HORIZONTAL PROJECTIONS

7.5' TOPO LOCATION

1160

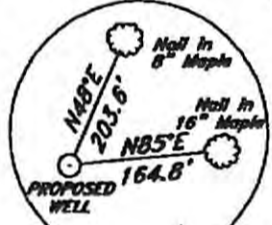
1155

1159

182

1111

1129



REFERENCES (Magnetic)

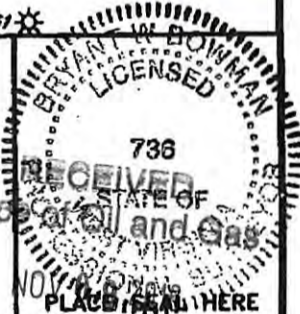
(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS

It is not the purpose or intention of this plat to represent surveyed locations of the surface or mineral parcels depicted hereon. The locations of the boundary lines, as shown, are based on record deed descriptions, field evidence found and/or tax map position, unless otherwise noted.

FILE NO. _____
DRAWING NO. _____
SCALE 1"=2000'
MINIMUM DEGREE OF ACCURACY 1:2500
PROVEN SOURCE OF ELEVATION GPS - NAD 27
WV SOUTH ZONE

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

(SIGNED) Bryant Bowman
R.P.E. _____ L.L.S. 736



STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION



DATE DECEMBER 17, 2007
OPERATOR'S WELL NO. RLHC-310BR of
API WELL NO. _____
Department of Environmental Protection

47-081-01470-C

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS,") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ELEVATION 2240' WATERSHED WORKMAN CREEK OF CLEAR FORK
DISTRICT CLEAR FORK COUNTY RALEIGH
QUADRANGLE PAX, WV

SURFACE OWNER CLEAR FORK COAL COMPANY ACREAGE ±168 AC
OIL & GAS ROYALTY OWNER CLEAR FORK COAL COMPANY LEASE ACREAGE ±168 AC

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) _____

PLUG AND ABANDON CLEAN OUT AND REPLUG
TARGET FORMATION Lower Beechley ESTIMATED DEPTH 1430

WELL OPERATOR PENN VIRGINIA OIL & GAS CORPORATION DESIGNATED AGENT BRYANT BOWMAN
ADDRESS SEVEN SHERIDAN SQUARE, SUITE 200 KINGSFORT, TN 37860 ADDRESS PO BOX 6 ALUM CREEK, WV 25003

02/03/2017

FORM WV-5

COUNTY NAME

PERMIT