



west virginia department of environmental protection

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

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
www.dep.wv.gov

July 15, 2016

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-8101256, issued to EXCO RESOURCES (PA), LLC, 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 all 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.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.

James Martin  
Chief

Operator's Well No: 311-C  
Farm Name: BEAVER COAL COMPANY  
**API Well Number: 47-8101256**  
**Permit Type: Plugging**  
Date Issued: 07/15/2016

Promoting a healthy environment.

07/15/2016

## 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.

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### CONDITIONS

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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.
4. This well is under a consent order and must be plugged under the terms of that agreement.

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      / Shallow     

5) Location: Elevation 2516 Watershed Stover Fork  
District Trap Hill County Releigh Quadrangle Beckley

6) Well Operator EXCO Resources (PA), LLC 7) Designated Agent Diana Stampler/C.T.Corp.  
Address PO Box 8. Address 5400 D Big Tyler Road  
Ravenswood, WV 26164 Charleston, WV 25301

Oil and Gas Inspector to be notified  
Name GARY KENNEDY  
Address PO Box 268, Nimitz WV 25978

9) Plugging Contractor  
Name R & R WELL SERVICE  
Address 42 LYNCH RIDGE  
WALTON, WV 25286

PHONE 304 382 8402

10) Work Order: The work order for the manner of plugging this well is as follows: *check for Rock Pressure*

Remove all equipment used to produce well

Pull 1848' of tubing

Freeport 5 1/2 cut and pull' *5 1/2" NOT CEMENTED, PULL ALL OF IT.*

Fill sump and all laterials with water

Set permanent bridge plug in 95/8 csg at 1000'

Cement 100 over plug 1000 to 900'

Gel to 352'

★ Cement 352 to <sup>SURFACE</sup> ~~252~~ over 13 3/8 seat, FW @ 200', FW @ 100'  
*MAY BE FRESHWATER @ 100' & 200'.*

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Set monument with API

SIGNATURE Randall D. Sluts

DATE- 5/24/16

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

*gmm* ★ IT APPEARS 95/8 DID NOT CTS. IF IT DID NOT, THEN  
• FREEPOINT, CUT & PULL 95/8" FROM ≈ 300' TO SURFACE.  
• CEMENT WITH CIA FROM 50' BELOW CUT TO SURFACE.

*[Signature]*  
07/15/2016



8101256 CP

WR-35  
Rev (5-01)

DATE: 11/4/2004  
API #: 47-8101256-C

State of West Virginia  
Department of Environmental Protection  
Office of Oil and Gas

*GRS*

Well Operator's Report of Well Work

Farm name: Beaver Coal

Operator Well No.: 311-C

LOCATION: Elevation: GL 2464'

Quadrangle: LESTER 7.5"

District: SLAB FORK

County: RALEIGH

Latitude: 12.650 Feet South of 37 Deg. 45 Min. 00 Sec.

Longitude 7.380 Feet West of 81 Deg. 20 Min. 00 Sec.

Company:

Energy Search, Inc	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 88 Products Lane, Marietta, Ohio 45750	20"	16'	16'	
Agent: Mike McCown				
Inspector: Rick Campbell	13 3/8"	302'	302'	185 sks
Date Permit Issued: 2/4/2002				
Date Well Work Commenced: 3/26/2002	9 5/8"	1029'	1029'	205 sks
Date Well Work Completed: 8/2002				
Verbal Plugging:	7"	1453'	Pulled	
Date Permission granted on:				
Rotary XX Cable Rig	5 1/2"		1914' MD	Not cemented
Total Depth (feet): Sump Hole 1950' MD/1400' TVD Main Lateral: 4222' MD/1998" TVD Leg 1: 3955' MD/1227" TVD Leg 2: 3897' MD/1205" TVD				
Fresh Water Depth (ft.): N/A	2 3/8"		1848'	
Salt Water Depth (ft.): N/A				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.):				

OPEN FLOW DATA

Producing formation Poca #3 Coal Seam Pay zone depth (ft) TVD Range 1205 -1998'  
See schematic

Gas: Initial open flow 200 in-line MCF/d Oil: Initial open flow Bbl/d

Final open flow 200 in-line MCF/d Final open flow Bbl/d

Time of open flow between initial and final tests Hours

Static rock Pressure 22 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

Signed:

By:

Date:

*[Signature]*  
Geologist  
11.16.04

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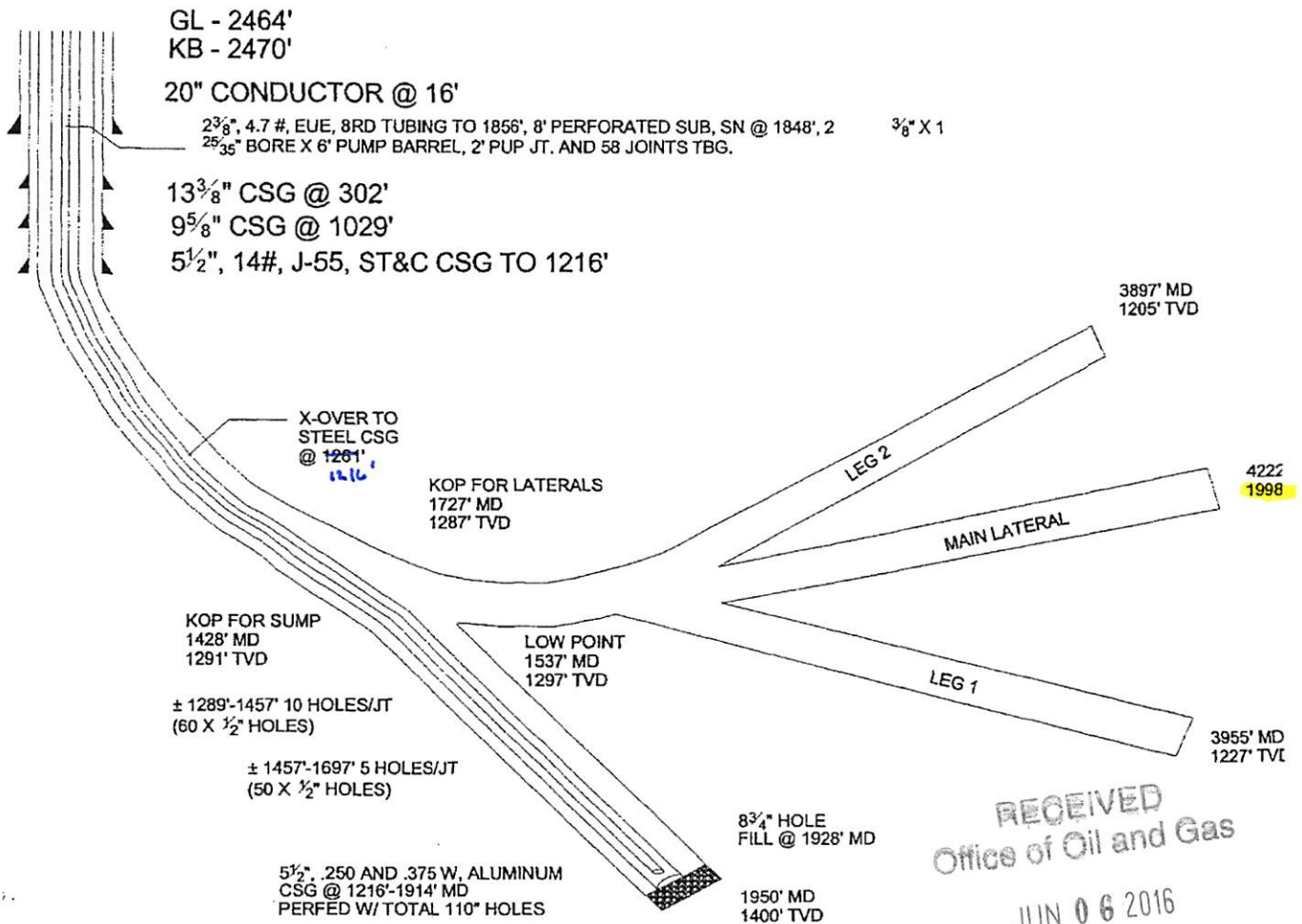
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Office of Chief  
MAR 18 2005  
WV Department of  
Environmental Protection

*[Signature]*

07/15/2016

WR-35  
ATTACHMENT

# BEAVER COAL 311C RALEIGH CO., WV



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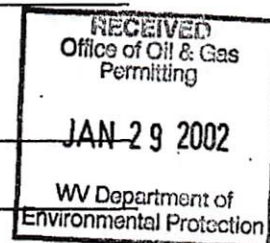
WV Department of  
Environmental Protection

FORM WW-5B (8/1998)

Page 1 of 81-01256C

**STATE OF WEST VIRGINIA**  
**DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**COALBED METHANE PERMIT APPLICATION**

- 1) Well Operator: Energy Search, Inc. 5,432 2) Well Name Beaver Coal Co.
- 3) Operator's Well Number 311-C 4) Elevation 2464'
- 5) Well Type: (a) Oil        / or Gas        /  
 (b) If Gas: Production        / Underground Storage        / CBM x /  
                   Deep        / Shallow        /
- 6) Proposed Target Formation(s): Poca 3
- 7) Proposed Total Depth: 1365 feet
- 8) Approximate Fresh Water Strata Depths: 100', 200'
- 9) Approximate Salt Water Depths: n/a
- 10) Approximate Coal Seam Depths: Beckley: 960' Poca #3: 1265'
- 11) Does Land Contain Coal Seams Tributary to Active Mines? Yes        / No x /
- 12) (a) Proposed Well Work: Drill a new CBM well  
 (b) If Stimulation Proposed, Describe Means to be Used to Stimulate Well: n/a
- 13) (a) Does the proposed operation plan to convert an existing well (as defined in W. Va. Code § 22-6-1) or a vertical ventilation hole to a coalbed methane well? Yes    / No x /  
 (b) If yes, please attach to this Application a list of all formations from which production is anticipated and a description of any plans to plug any portion of the well.
- 14) (a) Will the proposed coalbed methane well be completed in some but not all coal seams for production (except for a gob well or vent hole proposed to be converted to a well)?  
 Yes x / No        /  
 (b) If yes, please attach to this Application a plan and design for the well which will protect all workable coal seams which will be penetrated by the well.
- 15) (a) Does the proposed operation include horizontal drilling of a well commenced on the surface? Yes x / No        /  
 (b) If yes, please attach to this Application a description of such operations, including both the vertical and horizontal alignment and extent of the well from the surface to total depth.



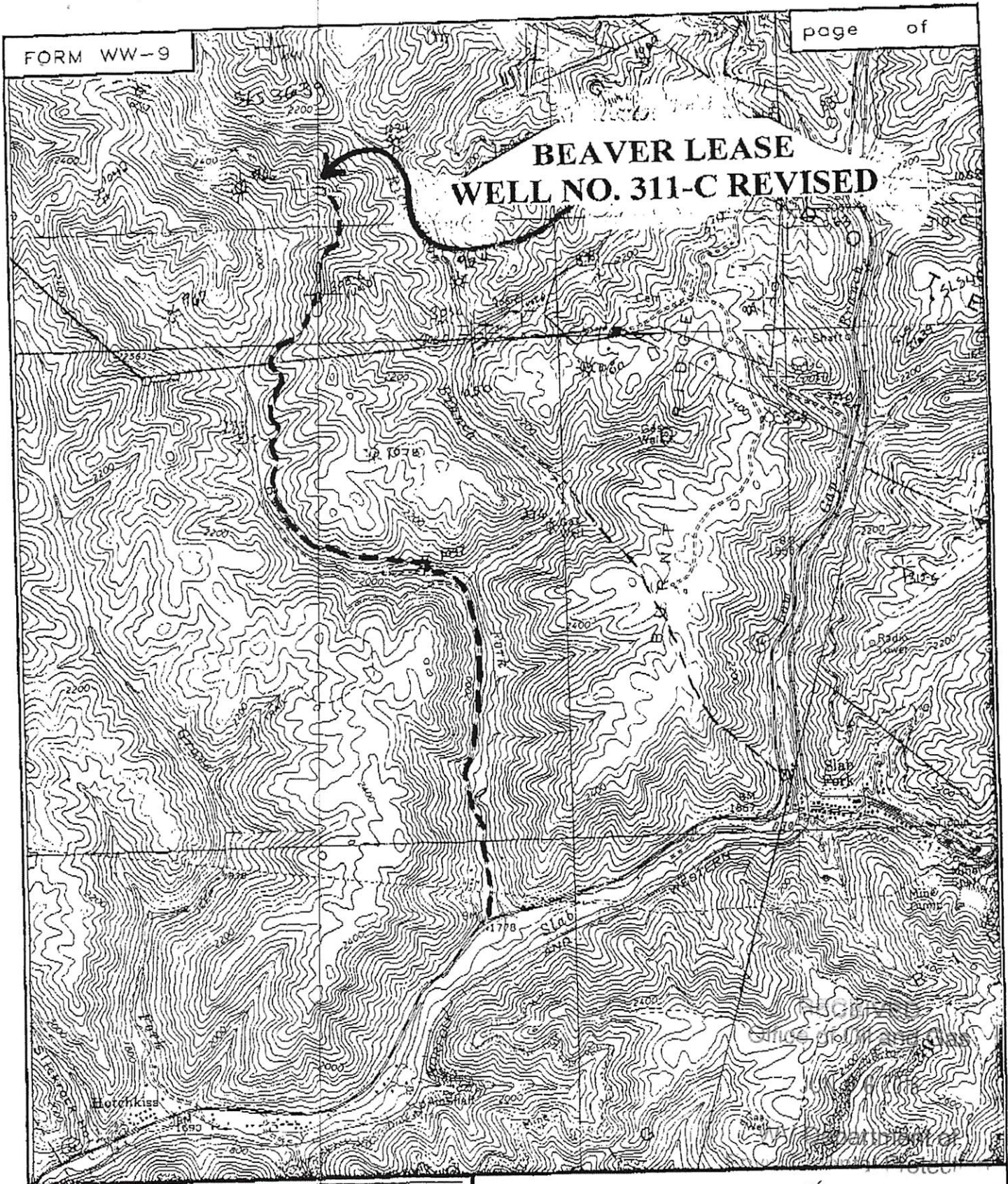
07/15/2016



FORM WW-9

page of

# BEAVER LEASE WELL NO. 311-C REVISED



SMITH LAND SURVEYING  
P.O. BOX 150 GLENVILLE, WV. 26351

TOPO SECTION OF *Lester 7.5'*

FILE NO. 3639 DATE *3/27/02* SCALE *1"=2000'*

*HLK*  
07/15/2016



8101256cf

WELL NO. 311-C  
API #47-081-1256C

Discharge

Area



Department of Oil and Gas

Division of Oil and Gas

Department of State



SMITH LAND SURVEYING  
P.O. BOX 150 GLENNVILLE, WV. 26351

TOPO SECTION OF LESTER 7.5'

FILE NO. 1194 P DATE 7/10/02 SCALE 1"=2000'

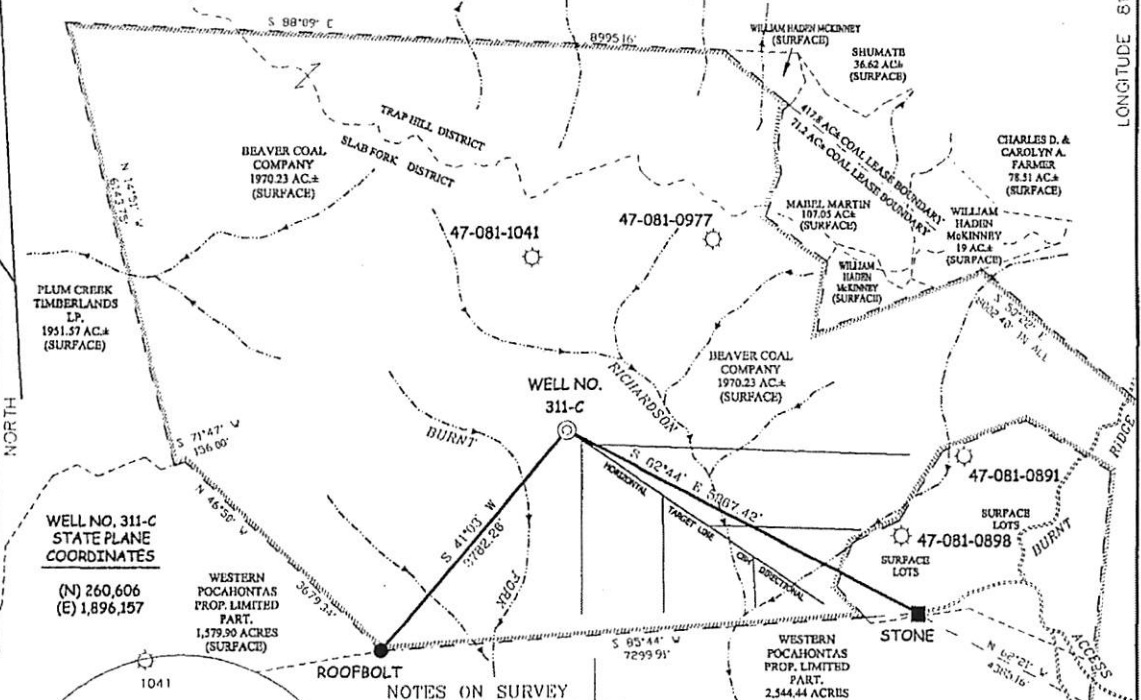
07/15/2016



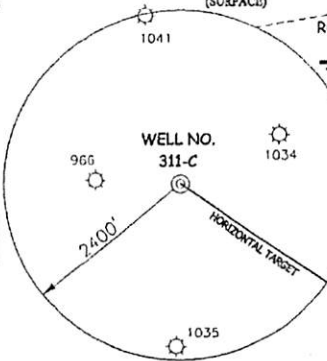
8101256CP  
Beaver 311c

# BEAVER COAL LEASE 2,180.63 ACRES ±

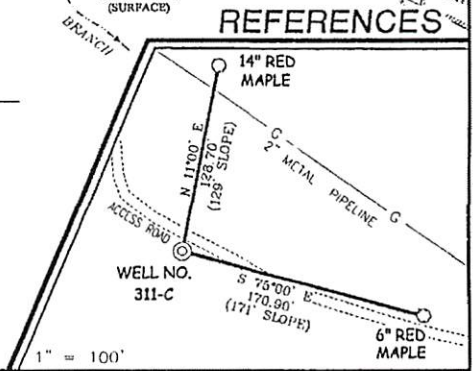
## WELL NO. 311-C



WELL NO. 311-C  
STATE PLANE  
COORDINATES  
(N) 260,606  
(E) 1,896,157



- ### NOTES ON SURVEY
1. TIES TO WELLS AND CORNERS ARE BASED ON STATE PLANT GRID NORTH WV SOUTH ZONE NAD '27.
  2. TIES TO REFERENCES ARE BASED ON MAGNETIC NORTH 12-13-01.
  3. LEASE BOUNDARY SHOWN HEREON TAKEN FROM A PLAT RECORDED IN LEASE BOOK 29 PAGE 374A RECORDED IN THE RALEIGH COUNTY CLERK'S OFFICE.
  4. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF RALEIGH COUNTY IN DECEMBER, 2001.
  5. WELL LAT./LONG. ESTABLISHED BY DGPS (SUBMETER MAPPING GRADE).



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 DIVISION OF ENVIRONMENTAL PROTECTION.



P.S. 677 *Gregory A. Smith*

(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.  
 DATE DECEMBER 31, 20 01  
 OPERATORS WELL NO. 311-C  
 API WELL NO. 47-81-01256C  
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1 / 200 FILE NO. 3639P311C (115-12)  
 PROVEN SOURCE OF ELEVATION BENCH MARK ELEVATION 2057' SCALE 1" = 2000'

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

WELL TYPE : OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL  IF "GAS" PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION : ELEVATION 2464' WATERSHED BURNT FORK  
 DISTRICT SLAB FORK COUNTY RALEIGH QUADRANGLE LESLIE (75)

SURFACE OWNER BEAVER COAL COMPANY ACREAGE 1970.23±  
 ROYALTY OWNER BEAVER COAL COMPANY LEASE ACREAGE 2,180.63±

PROPOSED WORK : LEASE NO. \_\_\_\_\_  
 DRILL  CONVERT  DRILL DEEPER  REDRILL  FRACTURE OR STIMULATE  PLUG OFF OLD FORMATION  PERFORATE NEW FORMATION  PLUG AND ABANDON  CLEAN OUT AND REPLUG  OTHER \_\_\_\_\_  
 PHYSICAL CHANGE IN WELL (SPECIFY) \_\_\_\_\_ TARGET FORMATION POCAHONTAS NO. 3  
 ESTIMATED DEPTH 1300'

WELL OPERATOR ENERGY SEARCH, INC. DESIGNATED AGENT FRANK ROTUNDA  
 ADDRESS 280 SANDERS W. BLVD. SUITE 200 ADDRESS 1608 GREENMONT HILLS DR.  
 KNOXVILLE, TN 37922 VIENNA, WV 26105

COUNTY NAME PERMIT

07/15/2016

8101256CP

WW-4A  
Revised 6-07

1) Date: 5/1/2016  
2) Operator's Well Number  
Beaver Coal 311C  
3) API Well No.: 47 - 081-01256C

**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: (a) Name Beaver Coal Company LP Address 115 1/2 Kanawha St. Beckley, WV 25801  
(b) Name \_\_\_\_\_ Address \_\_\_\_\_  
(c) Name \_\_\_\_\_ Address \_\_\_\_\_  
5) (a) Coal Operator Name Beaver Coal co. Address 115 1/2 Kanawha St. Beckley, WV 25801  
(b) Coal Owner(s) with Declaration Beaver Coal Co LTD  
Name \_\_\_\_\_ Address \_\_\_\_\_ P.O. \_\_\_\_\_  
(c) Coal Lessee with Declaration Name \_\_\_\_\_ Address \_\_\_\_\_  
6) Inspector Gary Kennedy Address P.O. Box 268 Nimitz, WV 25978 Telephone Ph. (304) 382 8402

**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 reverses side. However, you are not required to take any action at all.

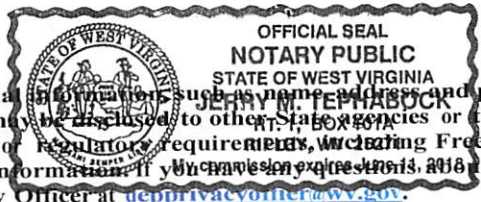
Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Department of Environmental 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 Chic

Well Operator EXCO RESOURCES (PA), LLC  
By: Randall Sheets  
Its: Secretary  
Address P O BOX 8 RAVENSWOOD, WV 26164  
Telephone 304-273-5371

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Office of Oil and Gas  
JUN 06 2016  
WV Department of Environmental Protection

Subscribed and sworn before me this 24th day of May 2016 Notary Public

My Commission Expires June 11, 2018  
Oil and Gas Privacy Notice



*Jerry M. Tephaddock*

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](mailto:depprivacyofficer@wv.gov).

07/15/2016



8101256C 4

WW-9  
(2/15)

API Number 47 - 081 - 1256C  
Operator's Well No. Beaver Coal 311-C

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

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name \_\_\_\_\_ OP Code \_\_\_\_\_

Watershed (HUC 10) \_\_\_\_\_ Quadrangle \_\_\_\_\_

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 IF Pit used
- \_\_\_\_\_ Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- \_\_\_\_\_ Reuse (at API Number \_\_\_\_\_ )
- \_\_\_\_\_ Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain NO FLUIDS EXPECTED ON RETURN *dk*)

*MUST CONTAIN WELL EFFLUENT IN TANKS AND DISPOSE OF PROPERLY. gwm.*

Will closed loop system be used? If so, describe: \_\_\_\_\_

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 *Randall K Sheets*

Company Official (Typed Name) RANDALL SHEETS

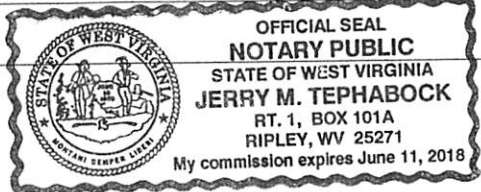
Company Official Title Supervisor

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WV Department of Environmental Protection

Subscribed and sworn before me this 24th day of may

*Jerry M. Tephabock* Notary Public

My commission expires June 11, 2018



07/15/2016

Proposed Revegetation Treatment: Acres Disturbed 0.5 Prevegetation pH 6.0

Lime 2 Tons per Acre of correct to 6.5  
Fertilizer (10-20-20 or equivalent) \_\_\_\_\_ 500 lbs/acre (500 lbs minimum)

Mulch \_\_\_\_\_ 2 Tons/acre

Seed Mixtures

Seed Type	Area I		Seed Type	Area II	
		lbs/acre			lbs/acre
KENTUCKY FESCUE		40	SAME AS #1		
ALSIKE CLOVER		5			
ANNUAL RYE		16			

Attach:  
Drawing(s) of road, location, pit and proposed area for land application.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: [Signature]

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Title: Inspector

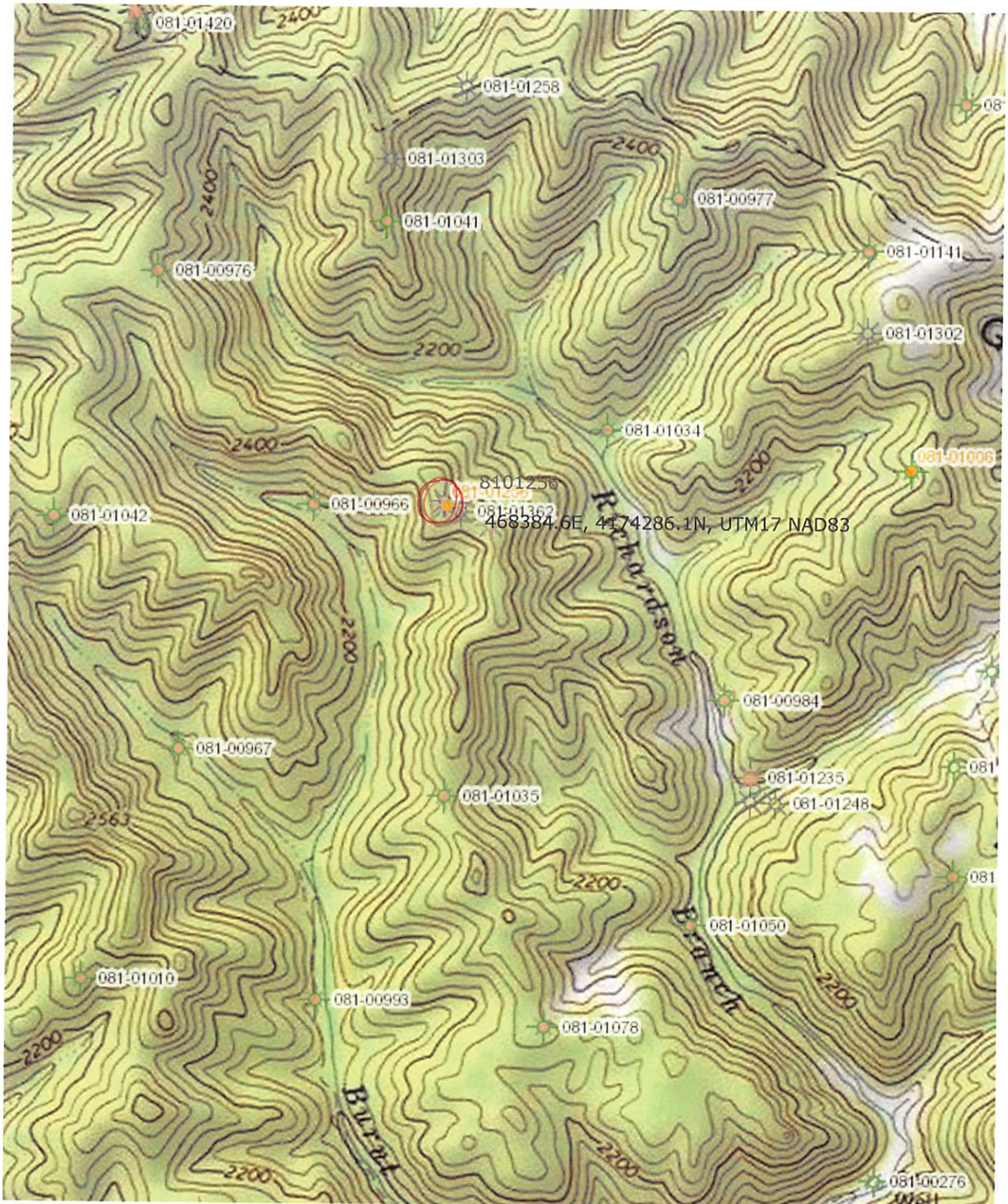
Date: JUN 06 2016

Field Reviewed? (  ) Yes (  ) No

5/25/16

WV Department of  
Environmental Protection





07/15/2016



8101256C P

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API: 47 081 01256C WELL NO.: 311 C

FARM NAME: Beaver Coal

RESPONSIBLE PARTY NAME: EXCO Resources, (PA), LLC

COUNTY: Releigh DISTRICT: Slab Fork

QUADRANGLE: Lester 7.5

SURFACE OWNER: Beaver Coal Company

ROYALTY OWNER: Beaver Coal Company

UTM GPS NORTHING: ~~4202725.3~~ 4174286.1 N

UTM GPS EASTING: ~~456377.1~~ 468384.6 E GPS ELEVATION: 2464

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

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Office of Oil and Gas

JUN 06 2016

WV Department of Environmental Protection

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.

Randall D. [Signature]  
Signature

Supervisor  
Title

5/26/16  
Date

07/15/2016