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**west virginia** department of environmental protection

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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](http://www.dep.wv.gov)

July 07, 2014

**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-8100636, 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: 21-AR  
Farm Name: MARTIN, IRIS FAY  
**API Well Number: 47-8100636**  
**Permit Type: Plugging**  
Date Issued: 07/07/2014

**Promoting a healthy environment.**

07/11/2014

## 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

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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 within two years of the date of issuance of this permit.

ck # 242513  
#100

WW-4B  
Rev. 2/01

1) Date January 16, 2014  
2) Operator's Well No. 21-AR  
3) API Well No. 47-081 - 00839

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 \_\_\_ or Underground storage \_\_\_) Deep \_\_\_ / Shallow x

5) Location: Elevation 2408' Watershed Cranberry Creek of Piney Creek  
District Town County Raleigh Quadrangle Beckley

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

8) Oil and Gas Inspector to be notified Name Gary Kennedy  
Address Rt 5 Box 30  
Bluefield, WV 24701  
9) Plugging Contractor Name \_\_\_\_\_  
Address \_\_\_\_\_

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

1. Pull 2 - 2 3/8" tubing and remove seating nipple and mud anchor. Run 2-3/8" to + or - 1345'. Load 4-1/2" casing with 6% gel (47-BBL-986#) Spot 100' cement plug from 1345'-1245' in 4-1/2" casing, Class A (20 sacks), Displace 5 BBLS-105# 6% gel. Pull tubing.
2. Free point and cut 4-1/2" casing at + or - 960'. Pull 4-1/2" casing - 932' / 29 joints of R-2, 9.5#, 4-1/2" = 8854 lbs. Run 2-3/8" tubing in hole to 960'. Load hole with 6% gel to compensate for 4-1/2" displacement and annular Vol (5 BBL+17.5-ANN = 475 # 6% gel) Spot 100' cement plug from 960' - 860' in 7" casing, (20 sacks), displace 4 BBLS (84# - 6%gel) Pull 2-3/8" tubing.
3. Free point and cut 7" casing at + or - 246'. Pull 8 joints of 246', R-2, 7" casing = 4182 lbs. Run 2-3/8" tubing in hole to 246'. Load hole with 6# gel to compensate for 7" displacement and annular Vol (1.5 BBL+7 BBL-ANN = 190 # 6% gel). Spot <sup>246'</sup> ~~100'~~ cement plug from 246' - <sup>surface</sup> ~~146'~~ in 8-3/4" hole. Displace cement to 146'. Pull tubing to 100' and cement to surface, 12-3/4" hole (68 sx)
4. Erect monument with API#

Received

APR 17 2014

3a. SET 246' CEMENT PLUG TO COVER 7" CUT AND BOTTOM OF (13"-10") CASING THAT WAS SET THROUGH AN OPEN MINE. JNM

Office of Oil and Gas  
WV Dept. of Environmental Protection

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 Date 2/28/14

07/11/2014



8100636P

1 add for den

81-00636P



IV-35  
(Rev 8-81)

Date November 28, 1983  
Operator's Well No. #21-AR  
Farm New River  
API No. 47 - 081 - 636

State of West Virginia  
Department of Mines  
Oil and Gas Division

WELL OPERATOR'S REPORT  
OF

DRILLING, FRACTURING AND/OR STIMULATING, OR PHYSICAL CHANGE

WELL TYPE: Oil / Gas  / Liquid Injection / Waste Disposal /  
(If "Gas," Production  / Underground Storage / Deep / Shallow )

LOCATION: Elevation: 2442 Watershed Cranberry Creek of Piney Creek  
District: Town County Raleigh Quadrangle BEckley 71/2

COMPANY Peake Operating Company  
ADDRESS Charleston, W. Va. 25301  
DESIGNATED AGENT Floyd B. Wilcox  
ADDRESS Charleston, W. Va. 25301  
SURFACE OWNER Charles and Iris Martin  
ADDRESS Beckley, W. Va.  
MINERAL RIGHTS OWNER New River Land Co.  
ADDRESS Mt. Hope, W. Va.  
OIL AND GAS INSPECTOR FOR THIS WORK Craig Duckworth  
ADDRESS Mt. Lookout, W. Va.  
PERMIT ISSUED August 30, 1983  
DRILLING COMMENCED Sept. 23, 1983  
DRILLING COMPLETED Sept. 27, 1983  
IF APPLICABLE: PLUGGING OF DRY HOLE ON CONTINUOUS PROGRESSION FROM DRILLING OR REWORKING. VERBAL PERMISSION OBTAINED ON

Casing Tubing	Used in Drilling	Left in Well	Cement fill up Cu. ft.
Size 20-16 Cond.	15'	15'	
13-10" <i>2.5" ID</i>	104'	104'	75 sks
9 5/8			
8 5/8			
7	1013	1013	75 sks
5 1/2			
4 1/2	1452		50 sks
3			
2			
Liners used			

GEOLOGICAL TARGET FORMATION Ravencliff Depth 1332 feet  
Depth of completed well 1484 feet Rotary  / Cable Tools  
Water strata depth: Fresh See Log feet; Salt feet  
Coal seam depths: See Log Is coal being mined in the area? NO

OPEN FLOW DATA  
Producing formation Ravencliff Pay zone depth 1346-1404 feet  
Gas: Initial open flow 33 Mcf/d Oil: Initial open flow Bbl/d  
Final open flow 103 Mcf/d Oil: Final open flow Bbl/d  
Time of open flow between initial and final tests 5 hours  
Static rock pressure 170 psig (surface measurement) after 24 hours shut in  
(If applicable due to multiple completion--)  
Second producing formation Pay zone depth 07/11/2014  
Gas: Initial open flow Mcf/d Oil: Initial open flow Bbl/d  
Final open flow Mcf/d Oil: Final open flow Bbl/d  
Time of open flow between initial and final tests hours  
Static rock pressure psig (surface measurement) after hours shut in

(Continuing on reverse side)

DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC.

Perforated Ravencliff 1346- 1352 (22 holes); 1373 - 1383 (106); 1393 - 1404 (20 holes); Fractured Ravencliff with 25 bbl 15% HCL; 300 bbl water; 468,000 SCF N<sub>2</sub> and 60,000 # 20/50 sand. BDP 2200#; ATP 2150#; balled out at 1600#; ISIP 2150#; 15 Min SIP 1450#.

WELL LOG

FORMATION	COLOR	HARD OR SOFT	TOP FEET	BOTTOM FEET	REMARKS Including indication of all fresh and salt water, coal, oil and gas
Shaley Sand			0	140	No water reported Open mine 60-65'
Sand			140	272	
Shaley Sand			272	370	
Sandy Shale			370	430	
Shale			430	638	
Sand			638	830	
Shale			830	906	
Sand			906	1020	
Shale			1020	1050	GAS CHECKS
Sand			1050	1068	1334' - no show
Shale			1068	1118	1417' - 10/10 w1" =33 MCFD
Princeton			1118	1186	1484 - 33 MCFD
Shale			1186	1332	
Ravencliff			1332	1407	
Shale			1407	1425	
Avis			1425	1472	
Shale			1472	TD	
DTD				1480	
LTD				1484	

(Attach separate sheets as necessary)

Peake Operating Company

Well Operator

By:

*Floyd B Wilcox*

Date:

07/11/2014

Note: Regulation 2.02(i) provides as follows:

"The term 'log' or 'well log' shall mean a systematic detailed geological record of all formations, including coal, encountered in the drilling of a well."



WW-4A  
Revised 6-07

1) Date: January 16, 2014  
2) Operator's Well Number  
21 - AR  
3) API Well No.: 47 - 081 - 00636

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

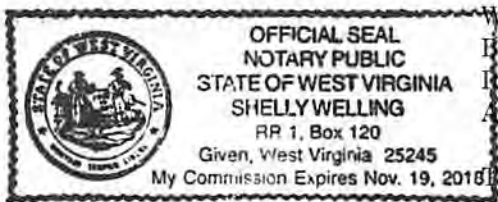
4) Surface Owner(s) to be served:	5) (a) Coal Operator
(a) Name <u>Iris Fay Martin</u>	Name _____
Address <u>PO Box 1087</u>	Address _____
<u>Skelton, WV 25919</u>	
(b) Name _____	(b) Coal Owner(s) with Declaration
Address _____	Name <u>WPP LLC Attn: Jay Perry</u>
	Address <u>5260 Irwin Road</u>
	<u>Huntington, WV 25705</u>
(c) Name _____	Name _____
Address _____	Address _____
6) Inspector <u>Gary Kennedy</u>	(c) Coal Lessee with Declaration
Address <u>Rt 5 Box 30</u>	Name _____
<u>Bluefield, WV 24701</u>	Address _____
Telephone <u>304-382-8402</u>	

**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 Chief.



Well Operator EXCO Resources (PA), LLC  
 By: Rick Green  
 Title: Construction Specialist I  
 Address PO Box 8  
Ravenswood, WV 26164  
 Telephone 304-273-5371

Subscribed and sworn before me this 19th day of Feb 2014  
Shelly Welling Notary Public  
 My Commission Expires 11/19/18

Received  
 APR 17 2014

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 [depprivacyoffier@wv.gov](mailto:depprivacyoffier@wv.gov).

07/11/2014

NR21  
8100636P

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"><li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li><li>Print your name and address on the reverse so that we can return the card to you.</li><li>Attach this card to the back of the mailpiece, or on the front if space permits.</li></ul>	A. Signature <input checked="" type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee
1. Article Addressed to:  IRIS FAY MARTIN PO BOX 1087 SKELTON WV 25919	B. Received by (Printed Name) STEPHEN C. MARTIN C. Date of Delivery 2-24-14
2. Article Number (Transfer from service label) 7006 2760 0005 3354 3137	D. Is delivery address different from item 1? If YES, enter delivery address below: <input type="checkbox"/> Yes <input type="checkbox"/> No
PS Form 3811, February 2004	3. Service Type <input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Registered <input type="checkbox"/> Insured Mail <input checked="" type="checkbox"/> Express Mail <input checked="" type="checkbox"/> Return Receipt for Merchandise <input type="checkbox"/> C.O.D.
Domestic Return Receipt	4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes
102595-02-M-1540	

U.S. Postal Service<sup>TM</sup>  
**CERTIFIED MAIL<sup>TM</sup> RECEIPT**  
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ 1.90
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$ 6.90</b>

7006 2760 0005 3354 3137

Sent To IRIS FAY MARTIN  
PO BOX 1087  
SKELTON WV 25919

Postmark Here  
MILLWOOD, WV 25262  
FEB 20 2014  
USPS

PS Form 3800, August 2006 See Reverse for Instructions

Received

APR 17 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection  
07/11/2014



8100636P

NR21

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY
<ul style="list-style-type: none"> <li>Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</li> <li>Print your name and address on the reverse so that we can return the card to you.</li> <li>Attach this card to the back of the mailpiece, or on the front if space permits.</li> </ul>	<p>A. Signature <input checked="" type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p><i>Maria B...</i></p> <p>B. Received by (Printed Name) <input checked="" type="checkbox"/> Date of Delivery</p> <p><i>Maria B...</i> 2-21-14</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>If YES, enter delivery address below:</p>
<p>1. Article Addressed to:</p> <p>WPP LLC ATTN: JAY PERRY 5260 IRWIN ROAD HUNTINGTON WV 25705</p>	<p>3. Service Type</p> <p><input checked="" type="checkbox"/> Certified Mail <input type="checkbox"/> Express Mail</p> <p><input type="checkbox"/> Registered <input checked="" type="checkbox"/> Return Receipt for Merchandise</p> <p><input type="checkbox"/> Insured Mail <input type="checkbox"/> C.O.D.</p> <p>4. Restricted Delivery? (Extra Fee) <input type="checkbox"/> Yes</p>
<p>2. Article Number (Transfer from service label) 7006 2760 0005 3354 3144</p>	
<p>PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540</p>	

7006 2760 0005 3354 3144

**U.S. Postal Service<sup>TM</sup>**  
**CERTIFIED MAIL<sup>TM</sup> RECEIPT**  
*(Domestic Mail Only; No Insurance Coverage Provided)*

For delivery information visit our website at [www.usps.com](http://www.usps.com)

**OFFICIAL USE**

Postage	\$ .90
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
<b>Total Postage &amp; Fees</b>	<b>\$ 6.90</b>

Postmark Here

MILLWOOD, WV  
FEB 20 2014

Sent to: WPP LLC  
 Street, Apt. # or PO Box No: ATTN: JAY PERRY  
 City, State, Zi: 5260 IRWIN ROAD HUNTINGTON WV 25705

PS Form 3809, August 2006

Received

APR 17 2014

Office of Oil and Gas  
WV Dept. of Environmental Protection

07/11/2014



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

CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM  
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE

Operator Name EXCO Resources (PA), LLC OP Code 307860

Watershed Cranberry Creek of Piney Creek Quadrangle Beckley

Elevation 2408' County Raleigh District Town

Description of anticipated Pit Waste: cement, water, gel

Will a synthetic liner be used in the pit? yes 20mic *BK*

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number \_\_\_\_\_ )
- Reuse (at API Number \_\_\_\_\_ )
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain solids in pit to be solidified with cement)

Proposed Work For Which Pit Will Be Used:

- Drilling
- Workover
- Other (Explain \_\_\_\_\_)
- Swabbing
- Plugging

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 *Rick Green*

Company Official (Typed Name) Rick Green

Company Official Title Construction Specialist I

Received

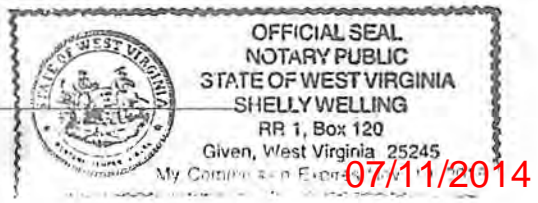
APR 17 2014

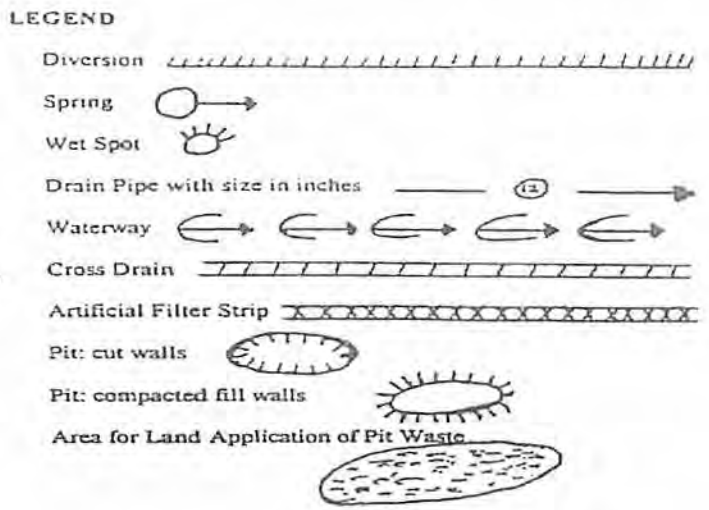
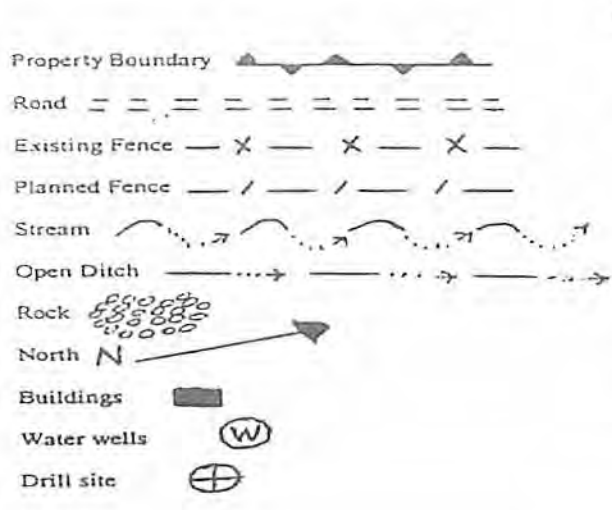
Subscribed and sworn before me this 19<sup>th</sup> day of February, 20 14 Office of Oil and Gas  
Dept. of Environmental Protection

*Shelly Welling*

Notary Public

My commission expires 11/19/2018





Proposed Revegetation Treatment: Acres Disturbed >1 Prevegetation pH \_\_\_\_\_

Lime 2 Tons/acre or to correct to pH 6.5

Fertilizer (10-20-20 or equivalent) 500 lbs/acre (500 lbs minimum)

Mulch 2 Tons/acre

Seed Mixtures

Seed Type	Area I	lbs/acre	Seed Type	Area II	lbs/acre
KY 31 Fescue		40	same as Area I		
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: \_\_\_\_\_

Received

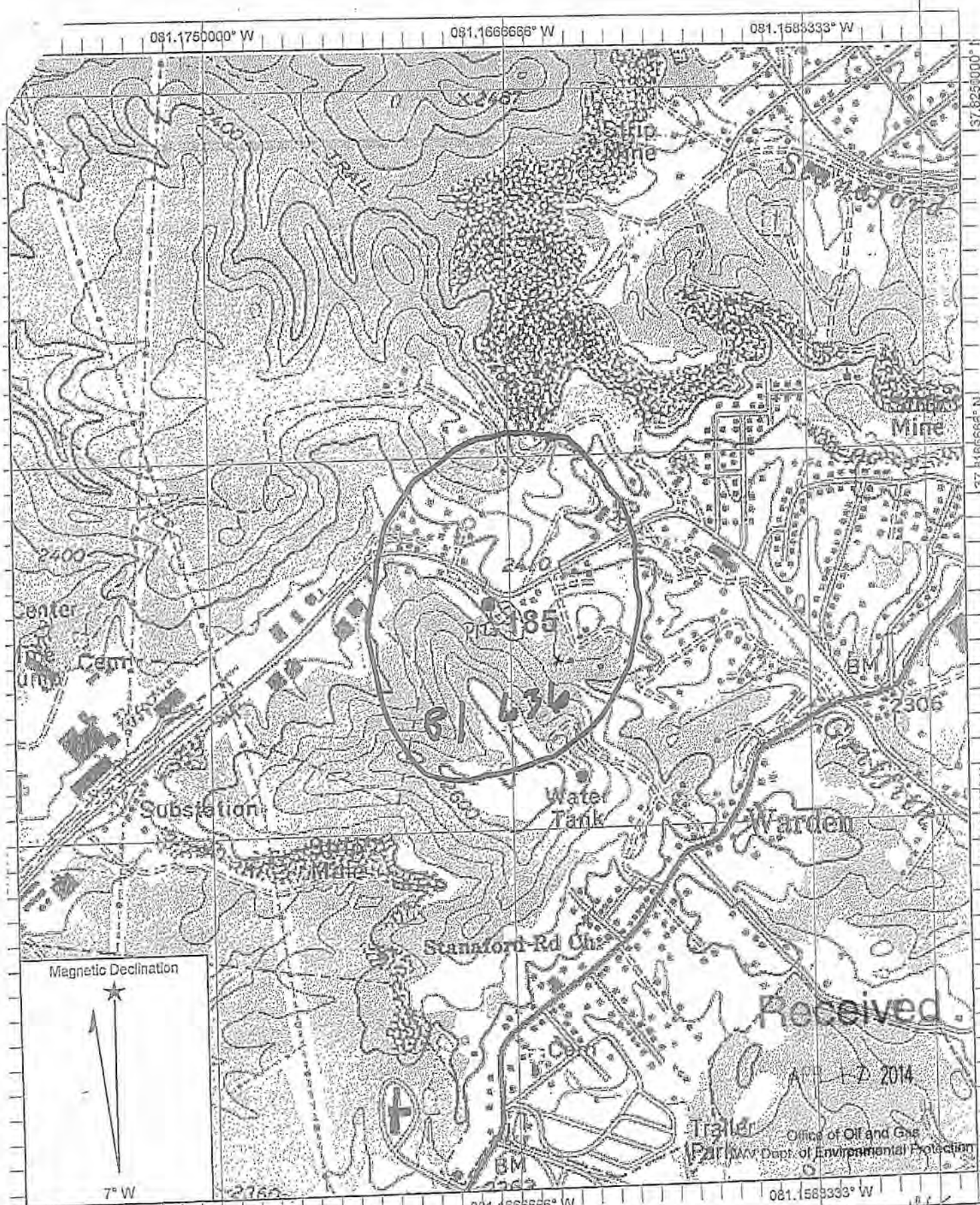
Title: Inspector Date: 2/28/14 APR 17 2014

Field Reviewed? ( X ) Yes ( ) No

Office of Oil and Gas  
WV Dept. of Environmental Protection



8100636P



Magnetic Declination

7° W

Name: BECKLEY  
 Date: 2/1/2008  
 Scale: 1 inch equals 1000 feet

Location: 037.8131449° N 081.1672024° W NAD 27

Received  
 APR 17 2014  
 Office of Oil and Gas  
 WV Dept. of Environmental Protection

*[Handwritten signature]*  
 2/1/08  
 07/11/2014



WW-7  
8-30-06



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

API: 47-081-00636 WELL NO.: AR-21

FARM NAME: Iris Fay Martin

RESPONSIBLE PARTY NAME: Exco Resources PA LLC

COUNTY: Raleigh DISTRICT: Town

QUADRANGLE: Beckley 7.5

SURFACE OWNER: Iris Fay Martin

ROYALTY OWNER: New River Company

UTM GPS NORTHING: 4185095.89

UTM GPS EASTING: 485283.60 GPS ELEVATION: 744.32 (2441 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

Received

APR 17 2014

Office of Oil and Gas  
WV Dept. 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.

[Signature]  
Signature

Construction Specialist  
Title

1-21-14  
Date  
07/11/2014