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 17, 2015

EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE
CRANBERRY TOWNSHIP, PA 16066-

Re: Underground Injection Control (UIC)
Permit #UIC2D1090980

Dear Applicant:

Your application for the referenced Underground Injection Control (UIC) Permit has been reviewed and found to be complete. Please find enclosed a **draft UIC permit and a public notice** which are prescribed by Title 47, Series 13, Section 13.24 issued pursuant to WV Code Chapter 22, Article 11 and 12. You are required to have this notice published in its entirety, as a Class I legal advertisement in the THE INDEPENDENT HERALD on 7/27/2015.

Upon publication, you are required to send a copy of the certificate of publication to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: Thomas L Bass, Environmental Resource Program Manager

The cost of publication is also your responsibility.

If no comments are filed during the thirty (30) day commenting period for the public notice, a permit may be issued. If you have any questions, feel free to call me at (304) 926-0499 ext. 1653.

Sincerely,

Thomas L Bass
Environmental Resource Program Manager

Enclosures as stated

PUBLIC NOTICE

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Phone: (304) 926-0450
Fax: (304) 926-0452

Re: UIC Permit Application
UIC2D1090980

APPLICATION FOR STATE UNDERGROUND INJECTION CONTROL PERMIT

Public Notice Number:UIC-2015-008

Paper:
THE INDEPENDENT HERALD
POST OFFICE BOX 100
PINEVILLE, WV 24874-0100

The following applicant has applied for a State Underground Injection Control (UIC) Permit for this facility or activity:

Applicant:
EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE
CRANBERRY TOWNSHIP, PA 16066

Application Number: UIC2D1090980
Business Conducted: Oil and/or natural gas production.

Location: On the waters of Marsh Fork in Slab Fork District of Wyoming County. Approximate: Latitude 37.651975 degrees Longitude -81.443506 degrees, UTM Northing:: 4167294.6 UTM Easting: 460878.0 Zone: 17N

Activity: Renewal of an Underground Injection Control (UIC) Permit for the subsurface injection of produced fluids.

The state of West Virginia will act on the above application in accordance with the West Virginia Legislative Rules, Title 47, Series 13, Section 13.24 issued pursuant to Chapter 22, Article 11&12.

Any interested person may submit written comments on the draft permit and may request a public hearing within 30 days of the date of publication. Such comments or requests should be addressed to:

Office of Oil and Gas
601 57th Street SE
Charleston, WV 25304
Attn: UIC Program

Comments received within this period will be considered prior to acting on the permit application. Correspondence should include the name, address, and telephone number of the writer and a concise statement of the nature of the issues raised. A public hearing may be held if the Chief considers significant the degree of public interest raised on issues relevant to the draft permit.

Interested persons may contact the person identified above at (304) 926-0450 to obtain further information.

The application, draft permit, and any required fact sheet are on file and may be inspected, by appointment, or copies obtained, at a nominal cost, at the Office of Oil and Gas, 601 57th Street SE, Charleston, WV 25304, between 8:00 a.m. and 4:00 p.m. on business days.

UNDERGROUND INJECTION CONTROL PERMIT

For

EXCO Resources (PA), LLC

Number UIC2D1090980

AUTHORIZATION TO OPERATE AN UNDERGROUND INJECTION CONTROL (UIC) INJECTION WELL
PERMIT NUMBER # UIC 2D1090980

In compliance with provisions of the West Virginia Code, Chapter 22, Article 6, Article 11 and Article 12, as well as Legislative Rules, Title 47, Series 13 and Series 58, Title 47, Series 55, and Title 35 Series 1 and Series 4.

In compliance with provisions of the West Virginia Code, Chapter 22, Article 6, Article 11 and Article 12, as well as Legislative Rules, Title 47, Series 13 and Series 58, Title 47, Series 55, and Title 35 Series 1 and Series 4.

NAME	EXCO Resources (PA), LLC	FACILITY TYPE	Brine Disposal
ADDRESS	260 Executive Drive Suite 100	WELL API #	**47-109-00980**
ADDRESS	Cranberry Township, PA 16066	FIELD NAME	NA

is authorized by this permit to inject Class II fluids that are brought to the surface in connection with conventional oil or natural gas production and may be commingled with waste waters from gas plants which are an integral part of production operations, unless those waters are classified as a hazardous waste at the time of injection into the **Gordon Sandstone** formations in accordance with the conditions set forth herein. The permitted injection depth shall be **4374** feet to **4425** feet. The injection well is located in **Wyoming** County, 7.5' **Big Run** Quadrangle. The coordinates for this injection well are:

UTM NAD 83 Northing **4167294.6** and UTM NAD 83 Easting **460878.**.

The maximum permitted wellhead injection pressure is established as **1229** PSI.

All references to West Virginia Regulations are to those that are in effect on the date that this permit becomes effective.

Any person who holds a permit shall pay an annual permit fee in accordance with the provisions of Title 47 Series 9 section 7 of the Legislative Rule. The first annual permit fee shall be remitted to the Office of Oil and Gas one (1) calendar year from the date of permit issuance; subsequent annual permit fees shall be remitted on or before the anniversary date of the permit issuance. The annual permit fee for a Class II disposal well is twenty five dollars ($25). The permit becomes void if the annual permit fee has not been paid within one hundred eighty (180) days of the due date. The Chief shall not reissue a permit until all annual permit fees due during prior terms of that permit have been paid in full.

Failure to pay the annual groundwater fee of $75.00 for Class IID as required by the West Virginia Code, Chapter 22, Article 11 and/or Article 12, shall be cause for revocation of this permit. The annual permit fee is due on the anniversary date of permit issuance and shall be paid on the anniversary date of issuance of this permit.

Non-compliance with the terms of this permit shall be cause for revocation of Certification under the terms of Chapter 22, Article 12, and revocation of the permit under Chapter 22, Article 11 of the West Virginia Code.

This permit and its authorization to inject shall remain in effect for five (5) years from the date of issuance of the final permit provided all terms of the permit are met.

James Martin, Chief
Office of Oil and Gas

PART I

A. REAPPLICATION

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit an administratively complete application for a new permit at least one hundred and eighty (180) days before this permit expires.

B. IMMEDIATE REPORTING

The permittee shall report any noncompliance which may endanger human health or the environment immediately after becoming aware of the circumstances by using the WVDEP Emergency Spill line number, 1-800-642-3074. Written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, permittee shall provide the anticipated time it is expected to continue; and the steps taken or planned to be taken to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported immediately:

i. Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water (USDWs).

ii. Any non-compliance with a permit condition or malfunction of the injection system which may cause fluid migration into or between the USDWs, or failure of mechanical integrity test demonstrations.

C. RIGHT OF APPEAL

Notice is hereby given of your right to appeal the terms and conditions of this permit by which you are aggrieved to the State Environmental Quality Board by filing a NOTICE OF APPEAL on the form prescribed by such Board for this purpose, with the Board, in accordance with the provisions of Chapter 22 Article 11, Section 21 of the code of West Virginia within thirty (30) days after the date of receipt of the above permit.

D. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit based on an approved permit application. The permittee shall not allow the underground injection activity authorized by this permit to cause or allow the movement of fluid containing any contaminant into underground sources of drinking water and may not cause a violation of any primary drinking water regulation or any health-based limit promulgated under 40 CFR Chapter 1, Part 142, of the Code of Federal Regulations, or of any water quality standard promulgated by the West Virginia Department of Environmental Protection/Division of Water and Waste Management. Any underground injection activity not authorized in this permit is prohibited. Compliance with the terms of this permit does not constitute a defense to any action brought under Part C and the imminent and substantial endangerment provisions in Part D of the Safe Drinking Water Act (SDWA) or any other common or statutory law for any breach of any other applicable legal duty.

E. PERMIT ACTIONS

1. This permit can be modified, revoked and reissued or terminated for cause specified in Chapter 22, Article 11 (hereafter §22-11), and Chapter 22, Article 12 (hereafter §22-12) of the West Virginia Code, and Title 47, Series 13 (hereafter 47 CSR 13) of the Legislative Rules. The filing of a request by the permittee for a permit modification, revocation and reissuance, suspension or revocation, or notification of planned changes or anticipated noncompliance, does not stay any permit condition.

2. Transfer of Permits. This permit is not transferable to any person unless notice is first provided to the Office of Oil and Gas and the permittee complies with requirements of 47 CSR 13-13.17. The Office of Oil and Gas may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Safe Drinking Water Act (SDWA).

F. SEVERABILITY

The provisions of this permit are severable, and if any condition of this permit or the permittee's application of any provision of this permit to any person or circumstance is held invalid, such invalidity shall not affect other provisions or applications of other provisions of the permit and the remainder of this permit shall not be affected.

G. DURATION OF PERMIT

This permit and the authorization to inject are issued for a period of five (5) years unless terminated under Part I Section H paragraph 11 of this permit. However, when through no fault of the permittee the West Virginia Department of Environmental Protection does not issue a new permit with an effective date on or before the expiration date of the previous permit and the permittee has submitted a timely administratively complete application as required in Part I section A of this permit, which is a complete application for a new permit, the expired permit shall continue to remain fully effective and enforceable.

H. GENERAL REQUIREMENTS

1. Duty to Comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the SDWA and the State Act and is grounds for enforcement action; for permit suspension or revocation, revocation and reissuance, or modification; or for denial of a permit renewal application. (47 CSR 13-13.12.a) Copies of UIC Program regulations (§22-11) may be obtained from the West Virginia Legislature's Web Site http://www.legis.state.wv.us/WVCODE/Code.cfm, and (47 CSR 13) may be obtained from the West Virginia Secretary of State's Web Site at http://www.sos.wv.gov/.

2. Duty to Reapply. If the permittee wishes to continue activity regulated by this permit after the expiration date of this permit, the permittee must apply for a new permit as required in Part I section A of this permit as well as obtain a new permit.

3. Duty to Halt or Reduce Activity Not a Defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on health of persons or the environment resulting from noncompliance with this permit.

5. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities, systems of treatment and control, and related equipment which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, adequate security at the facility to prevent unauthorized access, adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of this permit.

6. Duty to Provide Information. The permittee shall furnish to the Chief within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or revoking this permit, or to determine compliance with this permit. The permittee shall also furnish to the Chief, upon request, copies of records required to be kept by this permit. If the permittee becomes aware of any incomplete or incorrect information in the permit application or subsequent report(s), the permittee shall promptly submit information addressing these deficiencies to the Chief.

7. Inspection and Entry. The permittee shall allow the Chief, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

    a. Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

    b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

    c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

    d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance for any substances or parameters at any location.

8. Penalties. Any person who violates a permit requirement is subject to civil penalties, criminal penalties, fines and other enforcement actions under §22-11 and §22-12.

9. Signatory Requirements. Only a duly authorized person may sign documents and reports associated with this permit.

    a. All reports required by this permit and other information requested by the Chief shall be signed as follows:

        (1) For a corporation, by a responsible corporate officer of at least the level of vice-president;

        (2) For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

        (3) For a Municipality, State, Federal, or other public agency by either a principal executive or a ranking elected official.

    b. A duly authorized representative of the official designated in paragraph a. above may also sign only if:

        (1) The authorization is made in writing by a person described in paragraph a. above;

        (2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, and;

        (3) The written authorization is submitted to, and approved by, the Chief.

    c. If an authorization under paragraph (b) of this section is no longer accurate because a different individual has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section must be submitted to the Chief prior to or together with any reports, information or applications to be signed by an authorized representative.

d. Any person signing a document under paragraph (b) of this section shall make the following certification: (47 CSR 13-13.11.d). "I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all 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. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

10. Property Rights. Issuance of this permit does not convey property rights or mineral rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, any infringement of State or local law or regulations, or any exclusive privilege.

11. Permit Actions. This permit may be modified, revoked and reissued, suspended, or revoked for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, suspension or revocation, or notification of planned changes or anticipated noncompliance, does not stay any permit condition.

12. Confidentiality of Information.

    a. In accordance with 47 CSR 13-13.21, any information submitted to the State pursuant to this rule may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions, or in the case of other submissions, by stamping the words "CONFIDENTIAL BUSINESS INFORMATION" on each page containing such information. If no claim is made at the time of submission, the State may make the information available to the public without further notice.

    b. Claims of confidentiality for the following information will be denied:

        i. The name and address of any permit applicant or permittee.

        ii. Information which deals with the existence, absence, or level of contaminants in drinking water.

13. Monitoring Reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

14. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than thirty (30) days following each schedule date.

15. Other information. Where a permittee becomes aware that he/she failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Chief, he/she shall promptly submit such facts or information.

16. State or Federal Laws. Nothing in this permit shall be construed to preclude the institution on any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any State or Federal law or regulation.

PART II

A. RECORD RETENTION

1. Required Records. The permittee shall retain all records concerning the permitted underground injection well until three (3) years after completion of any plugging and abandonment. The Director may require the owner or operator to deliver the records to the Director at the conclusion of the retention period.

B. MONITORING REQUIREMENTS

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the fluid to be analyzed and the procedure for analysis of the sample shall be in accordance with test procedures approved under 40 CFR 136.3, unless otherwise approved by the Chief. The permittee shall identify the types of tests and methods used to generate the monitoring data.

2. All environmental measurements required by the permit, including but not limited to, measurements of pressure, temperature, mechanical, and chemical analyses shall be done in accordance with state guidance on quality assurance. All analysis must be performed by a West Virginia certified laboratory.

3. Records of monitoring information shall include:

    a. The date, exact place, and time of sampling or measurements;
    b. The individual(s) who performed the sampling or measurements;
    c. The date(s) analysis(es) were performed;
    d. Individual(s) who performed the analyses;
    e. The analytical techniques or methods used; and
    f. The results of such analyses.

4. The permittee shall daily monitor all the casing annuli with pressure sensitive devices or with such a method as approved or required by the Office of Oil and Gas to allow early detection of any leaks from the injection zone or casing. The Permittee shall also monitor injection pressure, volume, and rate daily. This information shall be reported monthly using the Office of Oil and Gas electronic WR-40 Form. Submittal shall be through the current WVDEP Electronic Submittal System (ESS).

5. The permittee shall sample, analyze and record the nature of all the injected fluid for the parameters listed in TABLE 1 below at the initiation of the injection operation and upon request by the Chief or whenever the operator observes or anticipates a change in the injection fluid.

TABLE 1

-pH	-Manganese
-Specific Gravity	-Total Dissolved Solids
-Barium	-Hydrogen Sulfide
-Specific Conductance	-Sodium
-Iron	-Alkalinity
-Magnesium	-Hardness
-Chloride	-Total Organic Carbon (TOC)
-Dissolved Oxygen	

6. Any analysis of specific gravity greater than 1.2 and any analysis of TOC greater than 250.0 mg/L shall be reported to the Chief within twenty-four (24) hours of the results.

7. The permittee shall maintain a record (manifest) of every load of fluid received. The record shall include the hauler's name and signature, the operator's name and signature, API number for the well the fluid was collected or the location from where the load was obtained, the volume of the load and whether the load of fluid delivered was a split load. If the load was a split load, each operator's name and location shall be listed and, if possible, the volumes of fluid received from each operator documented. This information shall be maintained on the Class II disposal manifest attached to this permit and maintained at the facility.

8. A wellhead pressure gauge shall be installed and maintained on the injection tubing to facilitate inspection and ensure compliance of maximum injection pressures as approved on Oil and Gas Form WR-37. A daily reading of the injection pressure shall be taken and reported on Form WR-40.

9. All pipeline(s) from the injection pump to the injection well shall be tested for integrity at least once every five (5) years with the results reported and on Form WR-37 and submitted to the Office of Oil and Gas. The pipeline integrity test shall pressurize the injection pipeline(s) to 1.5 times the maximum permitted wellhead injection pressure for a minimum of thirty (30) minutes, allowing for no more than five (5) percent loss after completion. The permittee shall notify the Chief of his or her intent to conduct an integrity test of the pipeline(s) no less than twenty-four (24) hours prior to such test. Upon failure of a mechanical integrity test or expiration of the five (5) year mechanical integrity test regulatory period, the permittee shall cease operation/injection and shut-in the well immediately until successfully repaired, replaced and then tested. Repairs shall be completed by the permittee and approved by the Office of Oil and Gas. All repairs shall be completed within ninety (90) days of the failure date. If repaired, the well must be re-tested and an updated WR-37 Form must be submitted to the Office of Oil and Gas for approval. Any change made to the pipeline fittings or piping will require integrity testing.

10. The permittee shall conduct a mechanical integrity test at a minimum frequency of once every five (5) years per 35 CSR 4-7.7.b. The permittee shall notify the Chief of his or her intent to conduct a mechanical integrity test no less than twenty-four (24) hours prior to such demonstration. The permittee must submit a WR-37 Form with each mechanical integrity test along with a copy of any test chart(s). Upon failure of a mechanical integrity test or expiration of the five (5) year mechanical integrity test regulatory period, the permittee shall cease operation/injection and shut-in the well immediately until successfully repaired, tested or permanently plugged and abandoned per regulation. Corrective action for repairs shall be completed for approval by the Office of Oil and Gas and be conducted within ninety (90) days of the failure date. If repaired, the well must be re-tested and an updated WR-37 Form must be submitted to the Office of Oil and Gas for approval.

11. In addition to the above requirement, a mechanical integrity test demonstration shall be conducted whenever protective casing or tubing is removed from the well, the packer is replaced or reseated, if well failure likely, or as requested by the Chief. The permittee may continue operation only if he or she has successfully demonstrated to the Chief the mechanical integrity of the permitted well. The permittee shall cease injection operations if a loss of mechanical integrity becomes evident or if mechanical integrity cannot be demonstrated.

C. REPORTING AND NOTIFICATION REQUIREMENTS

1. Anticipated Noncompliance. The permittee shall give advance notice to the Chief of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

2. Other Noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs Part I Section B, and Part II Section C Paragraph 3 of this permit, at the time monitoring reports are submitted. The report shall contain the information listed in Part I Section B of this permit. The permittee shall report all other instances of noncompliance in writing within ten (10) days of the time the permittee becomes aware of the circumstances. The reports shall contain the information listed in this permit.

3. Planned Changes. The permittee shall give notice to the Chief as soon as possible of any planned significant physical alterations, additions to the permitted facility, and/or any significant changes planned in the operation of the facility.

4. Cessation of Injection Activity. Any well which is not in use for a period of twelve (12) consecutive months shall be presumed to have been abandoned and shall promptly be plugged by the operator in accordance with the provisions in Chapter 22, Article 6 Section 24 of the West Virginia Code, unless the operator furnishes satisfactory proof to the Chief that there is a bona fide future use for such well.

5. Report on Permit Review. Within thirty (30) days of receipt of this permit, the permittee shall report to the Chief that he or she has read and understands and accepts all terms and conditions of the permit.

6. The owner or operator or person in charge of a facility subject to this rule from which a reportable discharge as described in subsection 3.3 of 35CSR1 occurs shall notify the Office of Oil and Gas by calling 1-800-642-3074 immediately; but in no case, later than twenty-four (24) hours after becoming aware of the discharge.

PART III

A. OPERATING REQUIREMENTS

1. Injection Fluid. The permittee shall not inject any hazardous substances, as defined by 40 CFR 261, or any other fluid, other than the fluids produced solely in association with oil and gas production operations.

2. Any well that penetrates the injection zone with an inactive and/or abandoned status within the permitted Area of Review, that does not have cement casing through the injection zone, shall be monitored immediately by a method approved by the Office of Oil and Gas, as well as properly plug and abandon such wells, as necessary.

3. Injection between the outermost casing protecting underground sources of drinking water and the wellbore is prohibited, as is injection into any USDW.

4. Corrective Action. The applicant must satisfy the requirement of the Office of Oil and Gas regarding any corrective action needed on all known wells penetrating the injection zone within the area of review. This must be done in a manner which satisfies the requirements of 47 CSR 13-13.9.

5. Loading and unloading stations shall have spill prevention and control facilities and procedures as well as secondary containment. Spill containment and cleanup equipment shall be readily accessible.

6. The permittee shall ensure that secondary containment for existing above ground storage tank(s) shall be adequately designed and constructed to be sufficiently impervious to prevent the released substance from penetrating the containment structure until the release can be detected and recovered, but in no case will that time be less than seventy-two (72) hours.

7. Above ground storage tank(s) associated with this underground injection facility shall have secondary containment sufficient capacity to contain 110% volume of the largest tank. Tank batteries or tanks connected in series by manifold, the combined volume of the tanks must be considered if the tanks are capable of simultaneous release. The combined capacity of the tanks connected by manifold shall be considered, unless the tanks are operated in a manner that prevents fluids flowing from one tank to another under any conditions.

8. No third party haulers shall be permitted without approval by the Office of Oil and Gas. For approval, the permittee shall designate by letter to the Office of Oil and Gas, any third party hauler proposed to be used for the transportation of fluids to the facility. The third party hauler may not commence transportation of fluids to the facility until approved by the Office of Oil and Gas.

9. Facility Security. The gate on the access road to the site shall be closed and locked at all times when there is not a company representative at the facility. All valves, water drains, and containment areas storage areas shall be secured and locked utilizing locking devises and/or plugs. During the life of this permit all gates and access points shall be secured and locked while no representative is at the facility. All visitors must check in upon arriving at the facility. Haulers (if used) shall not be allowed to off load without the proper paperwork and documentation.

B. PLUGGING AND ABANDONMENT

1. Any well which is not in use for a period of twelve (12) consecutive months shall be presumed to have been abandoned and shall promptly be plugged by the operator in accordance with the provisions of Chapter 22, Article 6, of the West Virginia Code, unless the operator furnishes satisfactory proof to the Chief that there is a bona fide future use for such well.

2. Prior to well plugging, the permittee shall apply for and receive a plugging permit from the Office of Oil and Gas to plug and abandon the well in accordance with an approved plugging and abandonment plan.

3. Plugging and abandonment shall be conducted in a manner to prevent movement of fluids into or between underground sources of drinking water.

4. Pursuant to Legislative Rule 47-13-13.7.f, the permittees plugging and abandonment plan shall be incorporated into the UIC permit. See attachment 1.

PART IV

A. SITE SPECIFIC CONDITIONS

1. Appendix A: Specific operational conditions.

2. Appendix H: Groundwater Protection Plan (GPP) The GPP shall be maintained and updated as necessary to protect groundwater quality.

3. Appendix I: Requirement for Financial Responsibility to plug/abandoned an injection well.

4. Attachment 1: Permittee's Plugging and Abandonment Plan.

5. Attachment 2: Site/Facility Diagram.

APPENDIX A

1) GEOLOGIC TARGET FORMATION Gordon Sandstone

Depth 4,374 Feet (top) 4,425 Feet (bottom)

2) Estimated Depth of Completed Well, (or actual depth of existing well): 4,484 (PBTD) Feet

3) Approximate water strata depths: Fresh none Feet Salt 2910 Feet

4) Approximate coal seam depths: 575', 735', 1,110', 1,424'

5) Is coal being mined in the area? Yes _____ No X

6) Virgin reservoir pressure in target formation 750 psig Source 47-087-01106 & 1024

7) Estimated reservoir fracture pressure 1,800 (wellhead pressure) psig (BHFP)

8) MAXIMUM INJECTION OPERATIONS:

Injection rate (bbl/hour) 60

Injection volume (bbl/day) 1,440

Injection pressure (psig) 1,229

Bottom hole pressure (psig) 3,506

9) DETAILED IDENTIFICATION OF MATERIALS TO BE INJECTED, INCLUDING ADDITIVES

Produced brines, fracturing fluids, pit fluids, O_2 scavenger, bacteriacid, scale inhibtor

Temperature of injected fluid: (°F) 57.5

10) FILTERS (IF ANY)

5 Micron

11) SPECIFICATIONS FOR CATHODIC PROTECTION AND OTHER CORROSION CONTROL

Injection fluid will be treated with phosphonate (scale inhibitor) to protect equipment and injection equipment and injection lines

APPENDIX A (cont.)

12. Casing and Tubing Program

TYPE	Size	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling	INTERVALS: Left in Well	CEMENT: Fill-up (Cu. Ft.)
Conductor	12 ¾"	New			24	24	
Fresh Water	9 ⅝"	New		32	697	697	244 sks (CTS)
Coal							
Intermediate 1	7"	New		17	1,530	1,530	250 sks (CTS)
Intermediate 2							
Production	4 ½"	New	J-55	10.5	4,540	4,540	200 sks (TOC 3,300')
Tubing	2 ⅜"	New	H-55	4.7		4,380	
Liners							

TYPE	Wellbore Diameter	Casing Size	Wall Thickness	Burst Pressure	Cement Type	Cement Yield (cu. ft./k)	Cement to Surface ?
Conductor							
Fresh Water							
Coal							
Intermediate 1							
Intermediate 2							
Production							
Tubing							
Liners							

Packers

	Packer #1	Packer #2	Packer #3	Packer #4
Kind:	Halliburton R4			
Sizes:	4 ½" X 2 ⅜"			
Depths Set:	4,350			

APPENDIX H

GROUNDWATER PROTECTION PLAN

Facility Name: Welchlands 29AW

County: Wyoming

Facility Location:

Postal Service Address:		
Latitude and Longitude:	37.651975; -81.443506	

Contact Information:

Person:	Brian E. Rushe, P.E. w/ EXCO Resources (PA), LLC
Phone Number:	724-720-2590
E-mail Address:	brushe@excoresources.com

Date: 06/20/14

1. A list of all operations that may contaminate the groundwater.

Production water tanks
Underground piping to production water injection well
Injection well

2. A description of procedures and facilities used to protect groundwater quality from the list of potential contaminant sources above.

Secondary containment structures for tanks; tank inspection conducted in accordance with SPCC Plan
Pipe line inspection
Tubing, packer & multiple casing strings in place for wellbore

3. List procedures to be used when designing and adding new equipment or operations.

When adding additional tanks, secondary containment will be modified to handle additional storage capacity.

4. Summarize all activities at your facility that are already regulated for groundwater protection.

Not applicable.

5. Discuss any existing groundwater quality data for your facility or an adjacent property.

Not applicable.

6. Provide a statement that no waste material will be used for deicing or fill material on the property unless allowed by another rule.

EXCO does not utilize produced water for any kind of onsite deicing activities.

7. Describe the groundwater protection instruction and training to be provided to the employees. Job procedures shall provide direction on how to prevent groundwater contamination.

All field employees will be trained annually during one of EXCO's monthly safety meetings. This training will also coincide with EXCO's SPCC insepction training, which shall include the following:

Dike Integrity Inspection
Piping Inspections
Housekeeping Procedures
Location of spill response materials and inventory

8. Include provisions for inspections of all GPP elements and equipment. Inspections must be made quarterly at a minimum.

Welchlands 29AW shall be inspected on a quarterly basis at a minimum

Signature: Brian E. Rush

Date: 6/20/14

(4/25)

APPENDIX I

Requirement for Financial Responsibility to Plug/Abandon an Injection Well

To: WV Department of Environmental Protection
Office of Oil and Gas
601 57th Street, SE
Charleston, West Virginia 25304-2345
ATTN: Underground Injection Control Program

From: EXCO Resources (PA), LLC
Brian E. Rushe, P.E.
260 Executive Drive, Suite 100
Cranberry Township, PA 16066

Date: June 20, 2014

Subject: Underground Injection Control (UIC) Permit Application
UIC2D1090980
Requirement for Financial Responsibility

I, Brian E. Rushe, verify in accordance with 47CSR13-13.7.g., that I will maintain financial responsibility and resources to close, plug, and abandon underground injection wells(s) in a manner prescribed by the Chief of the Office of Oil and Gas.

Name: Brian E. Rushe, P.E.

Signature: Brian E. Rushe

Date: 6/20/14

Attachment 1

WELCHLANDS 29AW – UIC 2D1090980

PLUGGING & ABANDONMENT PLAN

EXCO's plan to plug and abandon the Welchlands 29AW Injection Well shall consist of the following:

1. Set a cast iron bridge plug above the perforations for the injection zone.
2. Set a cement plug on top of the cast iron bridge plug.
3. Follow all West Virginia DEP Plug 7 Abandon rules and regulations from that point as to further plugs and retrieval of casing from the hole.

Attachment 2

Larson Design Group

Received
Office of Oil & Gas
OCT 30 2014

NO.	DATE	COMMENTS	BY	CHK
1	10-8-14		RTC	RBV

ISSUE / REVISIONS

Welchlands #29AW PERMIT # 2D1090980 DETAILED MAP

WYOMING COUNTY, BLAB FORK DISTRICT, WEST VIRGINIA

EXCO RESOURCES (PA), LLC
260 EXECUTIVE DRIVE, SUITE 100
CRANBERRY TOWNSHIP, PA 16066
PHONE (724) 720-2590

Larson Design Group • Architects Engineers Surveyors
8050 Rowan Road • Suite 504
Cranberry Township, PA 16066
PHONE 724.591.8562 TOLL FREE 877.323.6603
FAX 570.323.9902 • www.larsondesigngroup.com

SHEET NO.:

PROJECT NO.: 8013-010

Page ___ of___

Class II Manifest

UIC # _____

*I hereby certify that the contents of this shipment are Class II fluids that were brought to the surface in connection with oil or natural gas production.

Hauler' Name	*Signature	Receiver's Name	*Signature	API or Other	Volume of Load (Barrels)	Was the Load Split (Y/N)	Date

Make as many copies of the document as necessary to comply with the UIC permit.
Page numbers should be maintained sequentially to provide an adequate record.

RIGHT OF APPEAL

Notice is hereby given of your right to appeal the terms and conditions of this permit of which you are aggrieved to the Environmental Quality Board by filing a NOTICE OF APPEAL, on the form prescribed by such Board for this purpose, in accordance with the provisions of Section 21, Article 11, Chapter 22 of the Code of West Virginia within thirty (30) days after the date of receipt of this permit.

Underground Injection Control Permit

CERTIFICATION DOCUMENT

West Virginia Department of Environmental Protection
Office of Oil and Gas

Permit Id: 2D1090980

Permit Name: EXCO Resources (PA), LLC

In accordance with Part II, Reporting and Notification Requirements, I hereby certify that I have read and am personally familiar with all the terms and conditions of this permit.

I understand that the underground injection of any waste streams other than those provided for in this permit is strictly prohibited. I understand that failure to pay the Annual Permit Fee or any other associated fees required by West Virginia Code, Chapter 22, Articles 11 and 12 shall be cause for revocation of this Permit. I further understand that reporting is required, and noncompliance with the terms of this permit will be cause for revocation of the permit and subject me to significant penalties including the possibility of fines and imprisonment.

_____

Signature

_____

Name and Title (Type or Print)

_____

Date