



Date Prepared/Revised
April 2017
DEP USE ONLY
Date Received

FORM X RADIATION PROTECTION PLAN

This form must be fully and accurately completed. All required information must be typed or legibly printed in the spaces provided. If additional space is necessary, identify each attached sheet as Form X, reference the item number and identify the date prepared. The "date prepared/revised" on any attached sheets needs to match the "date prepared/revised" on this page.

General References: 273.140a, 277.140, 279.110, 281.119, 283.113, 288.139, 289.138, 293.111, 295.120, 297.113 and Department's "Guidance Document on Radioactive Monitoring at Solid Waste Processing and Disposal Facilities" - Document Number 250-3100-001.

SECTION A. SITE IDENTIFIER

Applicant/permittee: **Chevron Appalachia, LLC**

Site Name: **Dogbone Centralized Water Facility**

Facility ID (as issued by DEP): **None Issued**

SECTION B. FACILITY INFORMATION

Municipal Waste landfill	<input type="checkbox"/>	Noncaptive residual waste landfill	<input type="checkbox"/>
Construction/demolition landfill.....	<input type="checkbox"/>	Noncaptive residual waste disposal	
Municipal waste transfer facility	<input type="checkbox"/>	impoundment.....	<input type="checkbox"/>
Municipal waste composting facility.....	<input type="checkbox"/>	Noncaptive residual waste transfer facility	<input type="checkbox"/>
Municipal waste demonstration facility	<input type="checkbox"/>	Noncaptive residual waste composting facility	<input type="checkbox"/>
Municipal waste incinerator/resource		Noncaptive residual waste processing facility	<input checked="" type="checkbox"/>
recovery facility	<input type="checkbox"/>	Oil and Gas Wastewater Storage	
Other municipal waste processing facility	<input type="checkbox"/>	Impoundment.....	<input type="checkbox"/>

SECTION C. RADIATION PROTECTION ACTION PLAN

The radiation protection action and monitoring plan (Action Plan) must describe in detail the procedures that will be used by the operator of the facility for detecting, characterizing and further managing radioactive material in waste entering the permitted facility. This plan shall be used for both Solid Waste Facilities and Wastewater Treatment Facilities. The preparer should complete those sections designated as pertaining to their facilities. The Action Plan shall address the requirements set forth in the general references cited above. The Action Plan shall be prepared in accordance with the Department's "Guidance Document on Radioactivity Monitoring at Solid Waste Processing and Disposal Facilities" Document Number 250-3100-001, or in a manner at least as protective of the environment, facility staff and public health and safety. The Action Plan shall meet all of the statutory and regulatory requirements of this Commonwealth. The Action Plan should be prepared by a certified health physicist (CHP). **Refer to Attachment X-1**

Provide information on qualification of persons preparing the Action Plan and the person(s) responsible for implementation of the Action Plan.

A facility site map shall be attached to the Action Plan that identifies the location of the Designated Area (DA) for vehicles or sludge found to contain radioactive material (RAM).

Once approved by the Department, the procedures in the Action Plan shall be implemented and used by the facility operating staff and the facility users for managing RAM in the waste streams entering the facility.

1. Any method of concentrating radioactivity, including filtration of oil/gas well water storage of liquids to allow settling of TENORM sludge requires evaluation of the processed waste:

a. Processing methods shall be reviewed to determine staff radiation exposure. The exposure evaluation shall utilize the maximum expected concentrations.

SECTION C. RADIATION PROTECTION ACTION PLAN (Continued)

- b. Staff exposure shall be maintained as low as reasonably achievable and below applicable public exposure limits. If processing TENORM, radon exposure shall be considered and evaluated separately.
 - c. Incoming TENORM concentrations will be limited so that resulting waste concentrations are within approved FORM U authorizations.
 - d. If discharging liquids, provide the limiting liquid discharge values, i.e. EPA MCL or 10 CFR 20, Appendix B and not readily dispersible that incoming TENORM concentrations will be limited to.
2. Radiation Monitoring and Detection. Disposal facilities shall monitor all influent material. Waste processing facilities shall verify radioactivity of the influent material and monitor all effluent waste. (Use Appendix C & D of the Guidance Document No. 250-3100-001):
- a. Due to the self-shielding afforded by water, radiation monitoring of 100% of the incoming sewage, oil/gas well process water is not required by processors, however TENORM concentrations should be verified to be within the bounds of the above evaluation.
 - b. Radiation monitoring of effluent material by processors is required to verify conformance to Form U authorizations.
 - c. Identify the stationery RAM monitoring equipment (if used) that will be used for monitoring and detecting gamma radiation in waste entering or exiting the facility, the location of the monitoring equipment (entry portal, scales, etc.) and reasons for selecting the location. Provide information on why a particular type of radiation detector element or probe was selected for the facility, how the selected equipment will be installed and calibrated, and how the proper background for the location will be determined and used during equipment calibration.
 - d. Describe the types of hand-held radiological monitoring equipment that will be used at the facility and reasons for their selection including reasons for selecting a particular type of radiation detector element or probe in the hand-held detectors. The guidance document recommends hand-held (portable) detectors with multiple probes for contamination and a range of gamma dose rate measurements.
 - e. Describe the calibration procedures that will used for the fixed (if used) and portable detectors used at the facility.
 - f. Describe the evaluation equipment used at the facility that will be used to determine the validity of a radiation alarm and subsequent radioactive material characterization. Processors may use initial sample results and process knowledge to differentiate between licensed materials and TENORM.
 - g. What is the background radiation level and, given the facility background radiation level, describe the level at which the detectors at the facility will be set.
 - h. Describe step-by-step procedures that will be used in the event the radioactive material concentrations exceed limits in material incoming to the facility or, in the case of processors, outgoing.
 - i. Describe any procedures for attempting to determine the origin of the waste and describe the disposition and/or storage of rejected material.
 - j. Describe the on-site storage of waste.

SECTION C. RADIATION PROTECTION ACTION PLAN (Continued)**3. Operational Staff Training:**

Provide procedures describing how facility operational staff will be trained in proper use of all fixed and portable radiation monitoring equipment and also when to use which instrument. For Solid Waste Facilities, describe what training will be given to the operational staff in visually monitoring waste during transfer or unloading, for the potential presence of RAM including identifying the caution "radiation symbol" on containers.

4. Records and Reports:

Describe the procedures that will be used to record each event of outgoing waste RAM detection incidents at the facility including description of the RAM involved. Provide a brief narrative of the occurrence, where the RAM originated, the final disposition of the material and how all the information will be made part of the facility's daily operational records.

5. Plan Revision:

Identify the situations and scenarios in which the Action Plan will be updated and submitted to the Department for approval.

6. Additional Requirements:

- a. Describe how waste, that exceeds DOT limits, will be transported on public highways. See DEP Fact Sheet on DOT Shipping Compliance for oil/gas sludge. <http://www.elibrary.dep.state.pa.us/dsweb/get/Document-89853/2900-FS-DEP4374.pdf>.
- b. Sludge sent for disposal in a Pennsylvania landfill will be authorized by an approved Form U only.
- c. Provide the disposition of any outgoing solid waste exceeding radiation limits, that will not be landfilled in Pennsylvania.
- d. Describe radioactivity limits on land farmed/spreading sludge, if applicable.

ATTACHMENT X-1

RADIATION PROTECTION MONITORING AND ACTION PLAN

**CHEVRON APPALACHIA, LLC
DOGBONE CENTRALIZED WATER FACILITY
LUZERNE TOWNSHIP, FAYETTE COUNTY, PENNSYLVANIA**

RADIATION PROTECTION MONITORING AND ACTION PLAN

Prepared For:



**Chevron Appalachia, LLC
800 Mountain View Drive
Smithfield, PA 15478**

April 2017

COMPANY CONFIDENTIAL

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1.0 INTRODUCTION

1.1 GENERAL

This Radiation Protection Monitoring and Action Plan (RPMAP) has been prepared in accordance with the Pennsylvania Department of Environmental Protection (DEP), Bureau of Radiation Protection and Bureau of Land Recycling and Waste Management Document Number 250-3100-001. This RPMAP provides information and procedures in accordance with state and federal regulations to minimize potential radiation exposure to site personnel and the general public.

This RPMAP describes the procedures to be used at the Dogbone Centralized Water Facility (Dogbone CWF), located in Fayette County, Pennsylvania. The procedures are to be used by Chevron Appalachia, LLC (Chevron) employees and contractors to protect workers and the public; monitor stored waters for radioactive material emitting gamma radiation; for responding to a radiation Emergency Level Event; for personnel training; for record keeping, reporting, and notifications; and for the disposition of materials emitting gamma radiation above a predetermined action level. Chevron shall conduct operations at the Dogbone CWF under the terms and conditions of the DEP issued permit, associated permit application, and in conjunction with Bureau of Radiation Protection and Bureau of Land Recycling and Waste Management Document Number 250-3100-001.

The Dogbone CWF is designed to store and process (consisting of mixing, settling, filtering, and possibly chemically treating) waters for beneficial reuse in completion of unconventional wells. The waters to be processed at this facility may be generated from Chevron operated sites and non-Chevron projects, and will be transported to and from the facility via pipelines or tanker trucks. Storage will occur in above-ground tanks located within a secondary containment system. The previous use of the waters received at this facility may have been potentially exposed to both *naturally occurring radioactive material* (NORM) and/or *technically enhanced naturally occurring radioactive material* (TENORM) during drilling, fracturing, or production activities.

The DEP Bureau of Radiation Protection regulates the use of the majority of radioactive material within the Commonwealth, including both NORM and TENORM. The intent of regulatory oversight and enforcement is to protect Chevron employees, contractors, public health and safety, as well as the environment.

1.2 POLICY STATEMENT

It is Chevron policy that only individuals trained in the use of portable radiation detection equipment and this RPMAP shall provide monitoring and response capabilities at the Dogbone CWF. All individuals involved in performing surveys and/or responding to emergencies involving radiation shall be trained in radiation safety and detection.

Chevron's Radiation Safety Officer (RSO) or designee shall investigate each radiological action situation thoroughly, take appropriate actions to validate initial radiation survey results, complete the required documentation, and make notifications as required.

1.3 ACTION PLAN REVISION

Any proposed revision to the approved Chevron RPMAP shall be reviewed with the DEP prior to implementation.

2.0 RESPONSIBLE PERSONNEL

2.1 RADIATION SAFETY OFFICER

The person responsible for implementing the RMAP is the Radiation Safety Officer (RSO). Contact information for this individual is provided in the Emergency Notification List provided at the beginning of this RMAP and in Section 5.1.

The RSO and designees will receive training in accordance with Section 6.0 of this RPMP. The RSO or designee will be responsible for the following:

- Verifying applicable Chevron personnel are trained in the fundamentals of radiation safety and detection;
- Verifying radiation detection equipment is calibrated and functioning properly;
- Verifying objectives associated with keeping potential exposures As Low As Reasonably Achievable (ALARA) are met;
- Conducting periodic exposure rate surveys and evaluating results for all storage tanks;
- Maintaining records;
- Identifying and providing a response to a radiation Emergency Level Event;
- Isolating a potentially affected vehicle and/or material;
- Contacting Chevron management, the Health Physics Consultant and/or DEP as required;
- Facilitating the collection of data for required permits including but not limited to PA DEP Form U and Department of Transportation (DOT) compliance documentation; and
- Reviewing the RMAP and making changes as needed, and coordinating with DEP prior to implementing the changes.

2.2 DEP RADIATION PROTECTION PROGRAM

Water from well development activities and production well sites may contain TENORM, with a low exposure rate potential. Some non-Chevron wells may be developed with radiological tracer elements added to the hydraulic fracturing fluids. It should be noted that radiological tracers are licensed materials and cannot be transported to a non-licensed facility for disposal. If this material would be encountered, the RSO or his designee would reject the load and isolate the vehicle away from the occupied work areas then contact the generator and PADEP Bureau of Radiation Protection in order to return the load to its point of origin or an alternate destination as instructed by the generator or PADEP. Contact information for the DEP Bureau of Radiation Protection is shown on the Emergency Notification List provided in Appendix A of this RMAP.

2.3 HEALTH PHYSICS CONSULTANT

It is not anticipated that further characterization will be required because the sources of water are known. However, if further water characterization is needed Chevron will request additional support from a Health Physics Consultant. The Health Physics Consultant will then perform the characterization of the radiation source and assist in determining the appropriate disposition of the radioactive material. Contact information for the candidate Health Physics Consultant is provided in the Emergency Notification List provided in Appendix A of this RMAP.

3.0 RADIATION DETECTION EQUIPMENT AND FACILITIES

3.1 PORTABLE RADIATION DETECTION EQUIPMENT

Chevron will perform routine radiation surveys of the areas near the storage tanks with a Ludlum Measurements Inc. (Ludlum) Model 19 MicroR Meter (or equivalent).

The Model 19 MicroR or equivalent meter will be used for routine exposure rate surveys and will have a range from background to 5,000 microroentgens per hour ($\mu\text{R/hr.}$), capable of monitoring anticipated gamma radiation levels.

The monitoring equipment will meet the following criteria:

1. The equipment shall be capable of detecting and displaying ambient background gamma radiation levels. Typical ambient background gamma radiation levels in Pennsylvania range from 5 $\mu\text{R/hr.}$ to 10 $\mu\text{R/hr.}$
2. Instrumentation shall be powered by replaceable batteries (2-“D” or 2-“AA”) or cell pack, and provide an indication if battery capacity is not at levels for proper unit function. A battery check will be performed each time a survey is conducted.
3. The monitoring equipment shall be equipped with a visual readout in $\mu\text{R/hr.}$

3.2 CHARACTERIZATION EQUIPMENT

Characterization equipment is not proposed. If gamma radiation is detected at or above 100 $\mu\text{R/hr.}$ above background and determined to be valid, Chevron will reject the load and have it returned to its point of origin or alternative destination as directed by the operator responsible for the generation of the water or by PADEP.

3.3 RESPONSE CHECK

The monitoring equipment will be tested each day a survey is performed using a check source for which the instrument's expected response has been previously determined, to ensure it is operational and shows a consistent response to a known source. Chevron will use a 1 to 10 micro curie (μCi) Cesium-137 (Cs-137) source to perform response checks. When not in use, the check source will be kept in a secure storage location.

Prior to using a radiological instrument, a series of background and source measurements will be recorded. An average net response will be calculated. This average $\pm 20\%$ will be used to define the operational check response limits. An instrument will have a net response within this limit prior to use to be considered acceptable to collect data.

If the response is not within the acceptable range, the RSO or his designee will determine if the equipment should be recalibrated and/or repaired.

3.4 EQUIPMENT CALIBRATION

The portable radiation detection equipment will be calibrated annually to a Cs-137 source, traceable to the U.S. National Institute of Standards and Technology (NIST). Chevron will verify any new equipment has been calibrated within one year of its first use. Calibration will be performed by the manufacturer or a laboratory according American National Standards Institute (ANSI) N323A-1997.

3.5 SUPPLIES

Supplies will be maintained on site. A designated area will be established to maintain adequate materials for emergencies. Supplies may include gloves and personal protective equipment/clothing, plastic bags/containers, markers, barrier tape/rope, signs/labels, spill materials and paperwork.

3.6 DESIGNATED ISOLATION AREA

The Designated Isolation Area is shown on Figure 1. This area will be used to restrict access to a vehicle until instructions are confirmed to reject the load and have it returned to its point of origin or alternative destination as directed by the operator responsible for the generation of the water.

4.0 RADIATION DETECTION PROCEDURES

Fixed radiation monitoring systems will not be installed at the Dogbone CWF, consistent with Section C.2.a of Form X. Chevron will restrict inbound trucking to include only fresh, flowback, production, or treated water. Incoming water trucks containing flowback and production waters from Chevron unconventional wells are not expected to produce an exposure rate near the surface of the vehicle that would require additional radiological control. Therefore, Chevron is not required to use or install fixed radiation detection systems at the Dogbone CWF. However, flowback water from non-Chevron wells may have had radioactive tracers added during the hydraulic fracturing process and will be periodically evaluated to confirm that such tracers are not present. The procedure for evaluating the incoming non-Chevron water trucks is provided in this section.

4.1 STARTING PROCEDURES

All personnel involved in radiation monitoring shall conform with the instructions for use of personal protective equipment as outlined in Chevron's *NORM Management Guidance Document* and follow the steps below for equipment preparation before performing any survey.

1. Obtain the appropriate radiation survey meter (Ludlum Model 19 MicroR meter or equivalent) and check source, and verify the following:
 - Ensure the instrument has been calibrated within the last 12 months;
 - Ensure the battery check is satisfactory (if low, change the batteries);
 - Ensure the meter is not physically damaged;
 - Ensure the meter responds appropriately to the check source;
 - Record the battery and check source results on the Inspection Log provided in Appendix B; and
 - Return the check source to its secure holder, and return it to its secure location.

DO NOT USE SURVEY INSTRUMENTS THAT FAIL ANY OF THE ABOVE CHECKS.

2. Obtain an initial background gamma radiation measurement away from items to be surveyed before performing the survey. Record the background result and location on the Inspection Log provided in Appendix B.

4.2 STORAGE TANK SURVEYS

Chevron shall perform periodic gamma radiation exposure rate surveys of the above-ground storage tanks, associated receiving stations, adjacent loadout pads, and other nearby locations where Chevron personnel and contractors may be working. The surveys shall be performed at least weekly during periods of active receiving. After the first 6 months of operation, the survey results shall be reviewed by the Health Physics Consultant to determine if measurement locations and/or the frequency of surveys need to be modified in order to keep exposures ALARA. Survey

frequency may be reduced at the guidance of the Health Physics Consultant. Subsequent evaluations of the survey data by the Health Physics Consultant may be performed if requested by Chevron.

The storage tanks, receiving bays, loadout pads, and surrounding areas survey will be conducted in general accordance with the following:

1. Each storage tank will be surveyed if it has received additional water since the last survey. The gamma radiation detection meter will be held at a point approximately 1-foot from the tank surface, and scanned around the perimeter of the tank between 2 feet and 4 feet above the tank floor. Measurements will be taken in each of the four (4) compass directions and anywhere an anomaly (areas that are different from background) occurs.
2. Each tanker receiving bay or loadout pad will be surveyed, including places that are typically occupied by Chevron employees, contractors, drivers or areas with the highest potential for presence of radioactive materials (i.e., near sumps and hose storage areas). The equipment will be held approximately 3 feet from the ground surface.
3. Gamma radiation surveys will be performed at the secondary containment system sump and any location where there is evidence of a spill or leak.
4. If measurements around the tank pad or surrounding areas as noted above are greater than 10 μ R/hour above background, a survey will be performed around the perimeter of the pad. Measurements will be taken around the perimeter of the pad with at least one measurement per compass direction.
5. Measurement locations and results will be recorded on the Inspection Form provided in Appendix B.

4.3 WATER TRANSPORT VEHICLE SURVEYS

Radiation monitoring of incoming tanker trucks will be performed at the Tank Pad in limited cases. Random truck surveys are appropriate when receiving water from non-Chevron well pads. The frequency of random truck surveys will be increased when receiving flowback water from wells that had radioactive tracers added to the hydraulic fracturing process.

An incoming vehicle survey shall be conducted in general accordance with the following:

1. Follow the Starting Procedures described in Section 4.1 to begin the survey.
2. Scan the vehicle before it is unloaded.
3. Turn on the audible indicator on the survey meter. Scan the exterior (sides and rear) of the vehicle with the survey meter held approximately 2 inches from the surface of the vehicle. Observe the meter readout and listen to the audible indicator. If an increase is observed, determine if the source of the radiation is the truck driver or other nearby source of radiation. Have the driver step away from the truck and resurvey the truck. If the source is determined to be the truck, do the following:

IF	THEN
The radiation level does not exceed 10 μ R/hour above natural background.	Complete appropriate form and allow the vehicle to proceed.
The radiation level equals or exceeds 10 μ R/hour above natural background, but equals or is less than 100 μ R/hour.	Continue to monitor the vehicle (upscaling as necessary) and verify the highest surface reading on each side.
	Document the results on the appropriate form and allow the truck to proceed.
The radiation level exceeds 100 μ R/hour.	Isolate the vehicle.
	Validate the initial readings and determine the maximum surface measurement.
	Document the results on the appropriate form and communicate the information to the RSO or his designee.
	Instruct the driver to return the load back its point of origin or destination prescribed by the source operator.
	Perform immediate notifications if required.

4. Record the results on the Inspection Form provided in Appendix B. If measurements exceed the 100 μ R/hour threshold, complete the incident log contained in Appendix B and perform the notifications as required.

4.4 CHARACTERIZATION

Characterization of radioactive material exceeding 100 μ R/hour will not be conducted at this facility. Instead, Chevron will direct the load back to its point of origin or alternative destination as directed by the operator responsible for the generation of the water or PADEP. The point of origin operator may take steps to characterize the radioactive constituents of the material after it is removed from the Chevron site. The operator of the origin well (or the licensee of the material) will facilitate the proper paperwork to transport the material back to the pad of origin. This may include but is not limited to DOT-SP 11406 which is included as Appendix C of this document.

4.5 WASTE DISPOSAL

There is the potential that residual wastes may be generated in the form of sediment/sludge collected in the storage tank, scale or debris generated during maintenance activities, spent filter media, and/or soil/equipment contaminated by spills or leaks. These wastes will require disposal at an approved off-site facility. Prior to tank cleaning or other maintenance activities the work process and objectives will be defined and potential hazards including physical, chemical and radiological will be identified and the measures to mitigate these hazards and keep exposure ALARA will be identified. Work will be monitored by qualified individuals, including but not limited to the RSO. The results of the monitoring shall be maintained and available upon request from the DEP. Prior to transfer or transport for disposal, the RSO and the Chevron Waste Operation Coordinator will verify that radiological analysis has been included in the waste

characterization step associated with a DEP Form U request. All waste containers will be surveyed for gamma radiation prior to transport from the facility and all waste container shall be properly labeled according to applicable transportation and waste management regulations.

5.0 EMERGENCY LEVEL EVENT RESPONSE

If material in excess of 100 $\mu\text{R/hr.}$ is encountered in an incoming tanker, storage tank, or inside of processing equipment, the equipment or tank will be isolated. Contact the RSO for guidance in determining the next course of action.

Workers conducting surveys are not expected to experience exposures above health-based limits because of the low levels of radiation associated with the water and the brief and intermittent times of potential exposure. In addition, Chevron has an occupational hygiene program in place that addresses protection from, and response to, potential radiation exposure.

See PADEP Daily Records Report Requirements in guidance 1-6.

6.0 TRAINING

Training required by the PA DEP Guidance Document shall be provided by an individual qualified to provide instruction in the requirements of this RMAP, who is familiar with radiation survey equipment, and who is familiar with DEP Bureau of Radiation Protection guidance.

6.1 RADIATION SAFETY OFFICER AND DESIGNEE(S)

The Radiation Safety Officer and designee(s) shall complete a training program that addresses:

- DEP regulations that require a RMAP;
- Fundamentals of radiation safety and detection;
- Sources of radioactive material;
- Methods for minimizing exposure;
- Water load rejection procedures
- Radiation survey procedures provided in this RMAP;
- Appropriate procedures if an action level is reached;
- Hands-on training in the use of equipment described in the RMAP, with a demonstration of the trainee's ability to operate the equipment and interpret and document results;
- Procedures for reporting results to the RSO, and understanding the chain-of-command and notifications;
- DOT Exemption Notices; and
- Documentation and record keeping.

6.2 OTHER PERSONNEL

Other personnel who work around the Dogbone CWF will be informed of this RMAP as part of standard employee safety training. The training will include information on posting of notices to make water haulers aware of procedures if detected gamma radiation values exceed action levels noted in this RMAP.

7.0 RECORDKEEPING

7.1 INSPECTION LOG

An example Inspection Log is provided in Appendix B. The Inspection Log will include the following information at minimum:

- Confirmation that the instrument conforms to the requirements of Section 4.1 of this document;
- Surveyor's name;
- Date of the survey;
- Instrument model, serial number and calibration due date;
- Background measurement result(s) and location(s); and
- Survey results and locations.

Chevron shall maintain recorded information for a minimum of five (5) years.

8.0 RMAP REVISION

This RMAP shall be reviewed and updated as needed, as a result of any of the following:

- DEP guidance or regulations are revised;
- Opportunities for improvement of the RMAP procedures are identified;
- The centralized water facility configuration and/or operation materially changes so that some portion or all of this RMAP is no longer applicable;
- The individual responsible for implementing this RMAP or key personnel change;
- Monitoring equipment changes;
- Designated area for vehicles in which radioactive materials have been detected changes; or
- As requested by the DEP.

FIGURE

APPENDIX A

EMERGENCY NOTIFICATION LIST

EMERGENCY NOTIFICATION LIST

Organization	Contact/Address	Contact Information
Chevron	Mark Pitts Waste Operations Specialist/Radiation Safety Officer	(724)-564-3873 mpitts1@chevron.com
Chevron	Chad Dolby Water Supervisor	724-564-3759 CDolby@chevron.com
Chevron	Nicholas Staffieri Regulatory Compliance Team Lead	724-564-3715 nstaffieri@chevron.com
Perma – Fix Environmental Services	Andrew Lombardo – Certified Health Physicist	(724)-728-3960 (office) alombardo@perma-fix.com
National Response Center	NA	1-(800)-424-8802 (24 Hr)
DEP Southwest Office	Main Desk	(412) 442-4220 (412) 442-4000 (after hours)
Pennsylvania Emergency Management Agency	1310 Elmerton Avenue Harrisburg, PA 17110	(717) 651-2001
Fayette County Emergency Management Agency	24 East Main Street, 4 th Floor Uniontown, PA 15404	(724)-430-1277
Fire Station	Station 21 Hiller VFD 902 High Street Hiller, PA 15444	911 (724)-785-9793
Police	PA State Police 1070 Eberly Way Lemont Furnace, PA 15456	911 (724)-439-7111
EMS	Fayette EMS, Republic Station 224 Republic Road Republic, PA 15475	911 (724)-246-1119
Uniontown Hospital	500 W. Berkeley Street Uniontown, PA 15401	911 (724)-430-5000
STAT MedEvac	11 Airport Road Lamont Furnace, PA 15456	911 800-633-7828

APPENDIX B

INSPECTION LOG
AND
INCIDENT REPORT LOG

INSPECTION LOG

**CHEVRON APPALACHIA, LLC
RADIATION MONITORING SYSTEM
INSPECTION LOG**

Surveyor's Name: _____ Date: _____

Radioactive Check Source ID: _____

Radiological Instrument Model
Number and Serial Number: _____

Annual Calibration Due Date: _____

• **Monitoring Equipment Tests (Do not use equipment that fails any of the following checks):**

- | | | |
|--|---|---|
| - Less than 1 Year Since Annual Calibration Check? | Y | N |
| - Equipment Powered On? | Y | N |
| - Battery Check Performed? | Y | N |
| - Radioactive Source Response Check Performed? | Y | N |
| - Radioactive Source Response Check $\pm 20\%$? | Y | N |
| - Equipment is not damaged? | Y | N |
| - Background Radiation Level: _____ | | |

• **Radioactive Material Detection Levels:**

- | | | |
|---|---|---|
| - Exposure rate measurement(s) greater than background? | Y | N |
| - Exposure rate measurement(s) greater than $100\mu\text{R/hr}$ above background? | Y | N |

NOTE: If one or more exposure rate measurements is greater than $100\mu\text{R/hr}$. above background, follow the procedures described in Section 5 of the Radiation Protection Monitoring and Action Plan, and complete an Incident Report Log and attach it to this Inspection Log.

Attach a sketch or diagram to document where background and exposure rate measurements were collected.

INCIDENT REPORT LOG

**CHEVRON APPALACHIA, LLC
RADIATION MONITORING SYSTEM
INCIDENT REPORT LOG**

All exposure rate measurements equal to or greater than 100 μ R/hr. provided on the Inspection Log will be recorded on this log. This log shall be appended to the Inspection Log.

Radioactive Material Detection Incident:

- Date _____ Time _____

- Location of Occurrence
(Attach a Sketch, if
Appropriate) _____

- Provide a narrative description of the occurrence.

- Provide a description of the radioactive material involved, if known.

- Provide specific information on the origin of the material, if known.

- Name of the Driver: _____
Company: _____
Address: _____

Driver's License No.: _____
Phone No.: _____

**CHEVRON APPALACHIA, LLC
RADIATION MONITORING SYSTEM
INCIDENT REPORT LOG
(Continued)**

- Truck Description:

Make: _____ Model: _____
Color: _____ License: _____

- Name, address, and telephone number(s) of the generator, handler, and/or transporter of the radioactive material:

- Final disposition of the material (where rejected load went).

(If rejected, attach copy of DOT Special Permit.)

APPENDIX C

DOT-SP 11406 SHIPMENT APPROVAL FORM

Annex A

DOT-SP 11406 SHIPMENT APPROVAL FORM

Approval Number _____ (Refer to SP 11406, paras. 8a-8b)

This shipment of waste contains unidentified radioactive material causing low levels of radiation outside the transport vehicle. Shipment is under Special permit DOT-SP 11406 without a determination of materials meeting or not meeting the regulatory definition of radioactive material. The shipment is a minor radiological concern based on considerations of the U.S. Department of Transportation and the state official signing this shipment approval document.

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DETAILS of DETECTION SITE, MATERIALS, and ORIGIN

Facility: Name _____ Type: _____

Address: _____

① Contact person: _____ Ph. _____ Fax. _____

Vehicle Type: _____ Id.No.: _____

Company: _____ Operator name: _____

② Contact person: _____ Ph. _____ Fax. _____

Description of waste and release risks:

Radiation Measurement Date/time performed: _____

mrem/h (max) _____ location on vehicle _____

Inst.Mfgr./type/model _____ Bkg. mrem/h _____

Surveyor name: _____ Ph. _____

Shipment Origin Company: _____ Location: _____

Waste Origin: _____

③ Contact person: _____ Ph. _____ Fax. _____

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RADIATION CONTROL OFFICIALS (Detection, Origin, Transit, Destination States)

Detection State Official (receiving radiation detection info) Name: _____

④ Organization _____ Ph. _____ Fax. _____

Origin State Official (prior to detection) Name: _____

⑤ Organization _____ Ph. _____ Fax. _____

Transit State Official(s) (after detection) Name: _____

⑥ Organization _____ Ph. _____ Fax. _____

Destination State Official (after detection) Name: _____

⑦ Organization _____ Ph. _____ Fax. _____

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DESTINATION for RADIOACTIVE MATERIAL IDENTIFICATION and DISPOSITION

If carrier and shipper to this location are different than ② and ③, show info in REMARKS

Company Name: _____ Location: _____

⑧ Contact person: _____ Ph. _____ Fax. _____

=====
APPROVAL of SHIPMENT and SPECIAL CONDITIONS

Date: _____

Conditions:

⑨ Signature: _____ Ph. _____ Fax. _____

Title _____ Organization _____ Date _____

=====
IDENTIFICATION of RADIOACTIVE MATERIAL and DISPOSITION INFORMATION at DESTINATION

⑩ Name: _____ Title: _____ Date: _____

Organization: _____ Ph. _____ Fax. _____

=====
RECORD of TRANSMITTALS (Shipment Approvals and identification/disposition)
(Circumstances may influence distribution)

Shipment Approvals (Sent by ④ or ⑨) to (Show date sent)

OED CRCPD _____ ① _____, ② _____, ③ _____,

⑤ _____, ⑥ _____, ⑦ _____, ⑧ _____,

OTHER _____

Record of Identification and Disposition (Sent by ⑧, ⑩, or other _____) to

④ _____, ⑤ _____, ⑦ _____, OED CRCPD _____

OTHER _____

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REMARKS, OTHER INFORMATION

In case of an emergency, notify the National Response Center ((800)424-8802) and the (9) authorizing official and give the Special permit No. and Approval No.