Tri-Agency Regulatory Oversight
House Bill 59

House Bill 59 was passed by the 130th General Assembly on July 1, 2013. This bill amended several sections of Ohio Law to provide for greater oversight and coordination between the Ohio Department of Health (ODH), Ohio Department of Natural Resources (ODNR) and the Ohio Environmental Protection Agency (Ohio EPA) in ensuring the safe management of oil and gas waste.
ODNR
Division of Oil & Gas Resources Management

ORC 1509.02
“The division has sole and exclusive authority to regulate the permitting, location, and spacing of oil and gas wells and production operations within the state.”
Shale Development & Activity

Marcellus and Utica/Point Pleasant shale activity spreadsheets are posted weekly, typically Tuesday afternoon, by the Division of Oil and Gas Resources Management.

**Marcellus Shale**

**Weekly Permitting Activity**

- for week ending 5/30/15 [pdf 61Kb]
- Rig Count: 0

**Cumulative Permitting Activity**

- through 5/30/15 [pdf 63Kb] [xls 56Kb]
- Horizontal Permits: 44
- Horizontal Wells Drilled: 29

**Utica/Point Pleasant Shale**

**Weekly Permitting Activity**

- for week ending 5/30/15 [pdf 72Kb]
- Rig Count: 26

**Cumulative Permitting Activity**

- through 5/30/15 [pdf 329Kb] [xls 397Kb]
- Horizontal Permits: 1,926
- Horizontal Wells Drilled: 1,497

*Updated 6/8/2015*
Horizontal Well Activity in the Marcellus and Utica / Point Pleasant

**EXPLANATION**

Horizontal well status as of 4/4/2015
- PERMITTED (Permitted, Not Drilled, Canceled) (448)
- DRILLED (Drilled, Well Drilled) (64)
- PRODUCING (Producing, Plugged Back) (33)
- INACTIVE (Drilled Inactive, Shut in) (10)
- Lost Hole or Final Restoration (3)
- Dry and Abandoned (3)
- Plugged and Abandoned (0)

Well permit information from the ODNR Division of Oil and Gas Resources Management.

Recommended citation:
Ohio Department of Natural Resources, 2015, Horizontal Marcellus Well Activity in Ohio
Columbus, scale 1:1,300,000, revised 4/4/2015.
Waste Substance Facilities

Beginning on January 1, 2014, “no person shall store, recycle, treat, process, or dispose of in this state brine or other waste substances associated with the exploration, development, well stimulation, production operations, or plugging of oil and gas resources without an order or permit issued under this section or section 1509.06 or 1509.21 of the Revised Code or rules adopted under any of those sections.”
Class II Underground Injection Control Program

July 2014 UIC Letter
Solid wastes such as tank bottoms, used filters, used filter socks, used drilling mud and drilling mud solids, used frac sand, and pipe scale generated at a Class II saltwater injection well facility may be TENORM.... If the solid waste is TENORM, the solid waste must be (1) disposed of in accordance with ODH and Ohio EPA requirements or (2) transported out of state for lawful disposal.
ODH
Bureau of Environmental Health & Radiation Protection

Ohio Administrative Code
Chapter 3701:1-43 TENORM
(X) "Technologically enhanced naturally occurring radioactive material" means naturally occurring radioactive material with radionuclide concentrations that are increased by or as a result of past or present human activities. "Technologically enhanced naturally occurring radioactive material" does not include drill cuttings, natural background radiation, byproduct material, or source material.
Ohio Revised Code 3748.01 – Radiation control program definitions.

(Y) "Drill cuttings" means the soil, rock fragments, and pulverized material that are removed from a borehole and that may include a de minimus amount of fluid that results from a drilling process.
ODH – Guidance Documents

• Acceptable TENORM Analytical Methods for Radium-226 and Radium-228

• Guidance for Sampling Waste Containing TENORM

1. Purpose

The Ohio Department of Health (ODH) has established this list of acceptable analytical methods for assaying Radium-226 (Ra-226) and Radium-228 (Ra-228) to assist disposal site operators in verifying that:

- All waste containing Technologically Enhanced Naturally Occurring Radioactive Material (TENORM) has been accurately assayed for Ra-226 / Ra-228 using an ODH acceptable analytical method; and

- The reported "combined Ra-226 / Ra-228" concentration for waste being received for disposal, satisfies the exempt TENORM concentration criteria listed in paragraph (A) of rule 3701:1-43-07 of the Ohio Administrative Code, making the waste acceptable for disposal at their facility. Exempt TENORM concentrations are ≤5 picocuries per gram (≤5 pCi/gm) excluding natural background radiation. Natural background is 2 pCi/gm, unless an individual location submits an alternative background concentration request and obtains approval from ODH.

- TENORM loads accepted at solid waste landfills licensed under ORC Chapter 3734 must be accompanied by lab results referencing analytical methods recognized by this protocol.

- A representative composite sample must be obtained from each container used to collect waste defined as TENORM.

1. Note: Taking one sample for a production operation or geographic region is not acceptable.

2. Recognized Methods


Table 1 – ODH acceptable analytical methods for Ra-226. This Table includes all recognized proposed or modified methods.

Table 2 – ODH acceptable analytical methods for Ra-228. This Table includes all recognized proposed or modified methods.

Table 3 – ODH approved methods for radium. This Table includes all methods that have been approved by the Director of Health.
Early Stakeholder Outreach – October 2, 2013

The Director of Ohio EPA is authorized to impose additional rules at Solid Waste Landfills and Transfer Facilities to ensure the safe management of TENORM wastes, including:

• Monitoring leachate (landfills and transfer facilities) and ground water (landfills) for radium-226 and radium-228 and;

• Establishing and implementing procedures to ensure that TENORM equal to or greater than 5 picocuries per gram above natural background is not accepted at the facility.
Early Stakeholder Outreach (ESO) – May 18, 2015

Seeking public comment on proposed rulemaking regarding an approach to regulate the receipt, acceptance, processing, handling, management and transfer or disposal at a solid waste landfill and transfer facility of drilling operation material associated with the construction, operation or plugging of oil and gas wells.

Ohio EPA prepares early stakeholder outreach fact sheets to ensure stakeholders are brought into the review process as early as possible.

On October 2, 2013, Ohio EPA released an early stakeholder outreach fact sheet, which sought public comment on proposed rulemaking regarding an approach to regulate the receipt, acceptance, processing, handling, management and transfer or disposal at a solid waste landfill and transfer facility of drilling operation material associated with the construction, operation or plugging of oil and gas wells. The Agency has reviewed earlier comments received by stakeholders and is now releasing this updated fact sheet and conceptual draft rule language to give stakeholders a better understanding of how the concepts have evolved over the past year.

What is conceptual draft rule language?
The conceptual draft rule language reflects Ohio EPA’s vision of how a regulatory program might be carried out in Ohio. Preparing this conceptual draft rule language has helped the Agency identify areas that need additional stakeholder input and discussion. This conceptual draft rule language is draft, has not undergone a full internal Agency review, and is subject to change. The conceptual draft rule language is intended to facilitate continuation of stakeholder discussion.

What are the basic concepts?
The framework contained in the conceptual draft rule language includes applicability, exclusions, definitions, prohibitions, permit-to-install requirements, notification requirements, operational requirements, a radiation detection program for solid waste landfills and transfer facilities that propose to or accept oil and gas drilling operation material.

The Ohio Department of Health - Bureau of Radiation Protection (ODH-BRP) licenses handlers of radioactive material. A radiation detection program would require licensure by ODH-BRP. Stakeholders are encouraged to review the ODH-BRP draft document titled, “Solid Waste Disposal Facility Radioactive Material Detection Program,” included with the conceptual draft rule language.

What input is the Agency seeking?
The Agency is seeking stakeholder input on the basic concepts, conceptual draft rule language, and ODH-BRP draft document titled, “Solid Waste Disposal Facility Radioactive Material Detection Program.” General comments and specific questions should be submitted by July 3, 2013. Please contact Michelle Mountjoy at 614-728-5350 or michelle.mountjoy@epa.ohio.gov.
ESO - Basic Concepts of Rule Language

• The framework contained in the conceptual draft rule language includes:
  – applicability,
  – exclusions,
  – definitions,
  – prohibitions,
  – permit-to-install requirements,
  – notification requirements,
  – operational requirements,
  – radiation detection program
Draft Ohio EPA TENORM Rule Package

• 3745-515-01  General applicability and exclusions.
  – Applies to Solid Waste Landfills & Transfer Facilities
  – Does not apply to Residual Waste Landfills
  – Does not apply to ODNR authorized facilities, ORC 1509
Draft Ohio EPA TENORM Rule Package

• 3745-515-01  General applicability and exclusions.
  – Applies to Solid Waste Landfills & Transfer Facilities
  – Does not apply to Residual Waste Landfills
  – Does not apply to ODNR authorized facilities, ORC 1509

• 3745-515-02  Definitions.
  – Referenced definitions are primarily statutory; drill cuttings, drilling operation, drilling operation material, natural background, NORM, TENORM, and solid waste.
  – Definition of sanitary landfill facility and solid waste transfer facility consistent with statutory and regulatory definitions.
Draft Ohio EPA TENORM Rule Package

• 3745-515-01  General applicability and exclusions.
  – Applies to Solid Waste Landfills & Transfer Facilities
  – Does not apply to Residual Waste Landfills
  – Does not apply to ODNR authorized facilities, ORC 1509

• 3745-515-02  Definitions.
  – Referenced definitions are primarily statutory; drill cuttings, drilling operation, drilling operation material, natural background, NORM, TENORM, and solid waste.
  – Definition of sanitary landfill facility and solid waste transfer facility consistent with statutory and regulatory definitions.
• 3745-515-05  **Prohibitions.**
  – Prohibition to accept TENORM ≥5 picocuries above background for transfer or disposal
  – Prohibition to accept TENORM ≥5 picocuries above background for processing without ODH authorization
  – Prohibition to accept drilling operation material that are containerized bulk liquids or non-containerized liquids or semi-solid material containing free liquids without ODNR authorization
    • Limits stabilization agents to Portland cement and quicklime
Draft Ohio EPA TENORM Rule Package

- 3745-515-10  **Permit-to-install.**
  - Obtain a solid waste permit-to-install prior to acceptance for processing of TENORM ≥5 picocuries above background. Facility must also hold an ODH authorization
  - Still need to obtain a prior permit for any modification as defined in rule 3745-27-01.
Draft Ohio EPA TENORM Rule Package

• 3745-515-10  Permit-to-install.
  – Obtain a solid waste permit-to-install prior to acceptance for processing of TENORM ≥5 picocuries above background. Facility must also hold an ODH authorization
  – Still need to obtain a prior permit for any modification as defined in rule 3745-27-01.

• 3745-515-15  Notification
  – Facility currently accepting drilling operation material must provide notification to Ohio EPA within first month of rules becoming effective.
  – Future notification if facility decides to start accepting drilling operation material.
Draft Ohio EPA TENORM Rule Package

• 3745-515-20 Additional operational criteria for a sanitary landfill facility.
  – Implement a radiation detection program as required by rule 3745-515-25.
  – No acceptance of TENORM without first obtaining representative analytical results.
  – Recordkeeping associated with daily log of operations.
  – Annual leachate sampling and analysis to include addition of radium-226 and radium-228.
  – Ground water monitoring parameters to include addition of sampling and analysis of radium-226 and radium-228.
Draft Ohio EPA TENORM Rule Package

- **3745-515-25** Prohibited materials - radiation detection program.
  - Required fixed portal monitors
  - Implement a [Solid Waste Disposal Facility Radioactive Material Detection Program](#) (ODH Guidance)
  - No acceptance of drilling operation material TENORM without first obtaining representative analytical results.
  - Provides for direct disposal of alarmed loads containing radionuclides commonly used in medical procedures
  - Recordkeeping associated with daily log of operations.
Radiological Health Assessment Section

Stephen Helmer, Administrator
Chuck McCracken, Supervisor
David Lipp, Supervisor
Radioactive Material Detection Program

• Radioactive Material Detection Program Plan
• Facility organization structure
• Radiation detection equipment
• Designated area for investigation
• Procedures, Training, and Experience
• Records
• Reports to the Ohio Department of Health
• Annual review of the RMDP
Residential waste contaminated with a short half-lived radiopharmaceutical from a released medical patient

Lost or improperly disposed of licensed radioactive material associated with an academic, research, or industrial use

Naturally occurring radioactive material (NORM)

Technologically enhanced naturally occurring radioactive Material (TENORM)

Consumer product, antique, or historical object - contains radioactive material as an integral part

Radioactive material should be segregated and held for decay-in-storage for 10 half-lives, resurveyed and if background, disposed of as regular trash.

Immediate call to Ohio Department of Health

Move to remote storage location and secure against unauthorized removal until ODH arrives.

Verify NORM and Contact ODH

TENORM to be disposed of I.A.W. Chapter 3701:1-43 of the Ohio Administrative Code

Contact ODH

U.S. DOT Exemption from ODH
- Known Address
- < 50 mrem/hr outside of vehicle
- < 2 mrem/hr in occupied areas of vehicle
- Not unloaded

Radiation Survey and Gamma Spec to Identify Radionuclide

Evaluate for Disposition

Reject Load

Rejected Load Returned to Shipper

No Alarm – Normal Waste Disposal

2nd Alarm

1st Alarm

Incoming Load

Change Driver / Retry

DESIGNATED AREA
Incoming Load

No Alarm – Normal Waste Disposal

2nd Alarm

1st Alarm

Change Driver / Retry

DESIGNATED AREA
**DESIGNATED AREA**

- **Known Address**
- **< 50 mrem/hr outside of vehicle**
- **< 2 mrem/hr in occupied areas of vehicle**
- **Not unloaded**

**Radiation Survey and Gamma Spec to Identify Radionuclide**

**Immediate call to Ohio Department of Health**

- > 50 mrem/hr outside of vehicle or
- > 2 mrem/hr in occupied areas of vehicle

**Evaluate for Disposition**

- **Reject Load**

**U.S. DOT Exemption from ODH**

- Known Address
- < 50 mrem/hr outside of vehicle
- < 2 mrem/hr in occupied areas of vehicle
- Not unloaded

**Rejected Load Returned to Shipper**
Disposal of Loads Not Rejected at the Gate

- Residential waste contaminated with a short half-lived radiopharmaceutical from a released medical patient
  - Radioactive material should be segregated and held for decay-in-storage for 10 half-lives, resurveyed and if background, disposed of as regular trash.
- Lost or improperly disposed of licensed radioactive material associated with an academic, research, or industrial use
  - Immediate call to Ohio Department of Health
    - Move to remote storage location and secure against unauthorized removal until ODH arrives.
- Naturally occurring radioactive material (NORM)
  - Verify NORM and Contact ODH
- Technologically enhanced naturally occurring radioactive material (TENORM)
  - TENORM to be disposed of I.A.W. Chapter 3701:1-43 of the Ohio Administrative Code
- Consumer product, antique, or historical object - contains radioactive material as an integral part
  - Contact ODH
Residential waste contaminated with a short half-lived radiopharmaceutical from a released medical patient

Lost or improperly disposed of licensed radioactive material associated with an academic, research, or industrial use

Naturally occurring radioactive material (NORM)

Technologically enhanced naturally occurring radioactive Material (TENORM)

Consumer product, antique, or historical object - contains radioactive material as an integral part

Radioactive material should be segregated and held for decay-in-storage for 10 half-lives, resurveyed and if background, disposed of as regular trash.

Immediate call to Ohio Department of Health

> 50 mrem/hr outside of vehicle or
> 2 mrem/hr in occupied areas of vehicle

Immediate call to Ohio Department of Health

Move to remote storage location and secure against unauthorized removal until ODH arrives.

Verify NORM and Contact ODH

TENORM to be disposed of I.A.W. Chapter 3701:1-43 of the Ohio Administrative Code

Contact ODH

U.S. DOT Exemption from ODH
- Known Address
- < 50 mrem/hr outside of vehicle
- < 2 mrem/hr in occupied areas of vehicle
- Not unloaded
ESO – Next Steps

• Ohio EPA is seeking stakeholder input on the basic concepts, conceptual draft rule language, and ODH-BRP draft guidance document titled. General comments and specific. **Deadline for Comments is July 3, 2015.**

• After the comment deadline and consideration of stakeholder input, Ohio EPA will prepare a draft version of rules for interested party review and comment.

• Future steps will also include formally filing these new rules with the Joint Committee on Agency Rule Review (JCARR).
Written comments will be accepted through close of business July 3, 2015.

• Please submit input to –

Michelle Mountjoy
Ohio EPA - DMWM
P.O. Box 1049
Columbus, OH 43216-1049

Michelle.mountjoy@epa.ohio.gov
Questions?

• Please Contact -

Aaron Shear
Solid Waste Compliance & Inspection Support
Ohio EPA – Division of Materials & Waste Management
614-728-5350

Aaron.shear@epa.ohio.gov