Robert Leidy

From: Stephen Helmer
Sent: Tuesday, March 02, 2010 8:33 AM
To: Robert Leidy
Subject: FW: Gas drillers try recycling their brine

fyi

Stephen Helmer
Program Administrator
Bureau of Radiation Protection
Phone: 614-728-3611

From: Michael Snee
Sent: Monday, February 08, 2010 8:55 AM
To: Chuck McCracken; Kenneth Barnhart; David Lipp; Jim Colleli; Stephen Helmer
Subject: Gas drillers try recycling their brine

This article was in the Dispatch yesterday.

Michael Snee
Ohio Department of Health
Bureau of Radiation Protection

Gas drillers try recycling their brine
Polluted water is being used again to unlock natural gas in Appalachia
Sunday, February 7, 2010 5:43 AM
By Marc Levy and Vicki Smith
AP

HARRISBURG, Pa. - A drilling technique that is beginning to unlock staggering quantities of natural gas underneath Appalachia also yields a troubling byproduct: powerfully briny wastewater that can kill fish and give tap water a foul taste and odor.

With fortunes, water quality and cheap energy hanging in the balance, exploration companies, scientists and entrepreneurs are scrambling for an economical way to recycle the wastewater.

"Everybody and his brother is trying to come up with the 11 herbs and spices," said Nicholas DeMarco, executive director of the West Virginia Oil and Natural Gas Association.

Drilling crews across the country have been flocking since late 2008 to the Marcellus Shale, a rock bed the size of Greece that lies about 6,000 feet beneath eastern Ohio, New York, Pennsylvania and West Virginia. Geologists say it could become the most-productive natural-gas field in the United States, capable of supplying the nation's needs for as long as two decades.

But first, the industry realizes it must solve the challenge of what to do with the wastewater. As a result, the Marcellus Shale is on its way to being the nation's first gas field where drilling water is

widely reused.

The polluted water comes from a drilling technique known as hydraulic fracturing, or "fracking," in which millions of gallons of water, sand and chemicals are blasted into each well to fracture tightly compacted shale and release trapped natural gas.

Fracking has been around for decades. But the drilling companies now use it in conjunction with a new horizontal-drilling technique they brought to Appalachia after it proved effective in the 1990s on a shale formation in Texas.

Fracking a horizontal well costs more and uses more water, but it produces more natural gas from shale than a traditional vertical well.

Once the rock is fractured, some of the water - estimates range from 15 percent to 40 percent - comes back up the well. It can be five times saltier than seawater and laden with dissolved solids such as sulfates and chlorides, which conventional sewage and drinking-water treatment plants aren't equipped to remove.

At first, many drilling companies hauled away the wastewater in tanker trucks to sewage-treatment plants that processed the water and discharged it into rivers - from which water utilities then drew drinking water.

But in October 2008, environmental regulators were stunned to find that the levels of dissolved solids spiked above government standards in southwestern Pennsylva nia's Monongahela River, a source of drinking water for more than 700,000 people.

Regulators said the brine posed no serious threat to human health. But the area's tap water carried an unpleasant gritty or earthy taste and odor and left a white film on dishes. And industrial users noticed corrosive deposits on valuable machinery.

One 11-year-old suburban Pittsburgh boy with an allergy to sulfates developed hives that itched for two weeks until his mother learned about the Monongahela's pollution and switched him to bottled or filtered water.

No harm to aquatic life was reported, although high levels of salts and other minerals can kill fish and other creatures, regulators say.

Pennsylvania officials immediately ordered five sewage-treatment plants on the Monongahela or its tributaries to sharply limit the amount of frack water they accepted to 1 percent of their daily flow.

"It is a very great risk that what happened on the Monongahela could happen in many watersheds," said Ronald Furlan, a wastewatertreatment official for the Pennsylvania Department of Environmental Protection. "And so that's why we're trying to pre-empt and get ahead of it to ensure it doesn't happen again."

Regulators in Pennsylvania are pushing a new standard for the level of dissolved solids in water released from a treatment plant.

West Virginia authorities have asked sewage-treatment plants not to accept frack water while the state develops an approach to regu lating dissolved solids.

3/2/2010

In New York, fracking is largely on hold while companies await a new set of state permitting guidelines.

For now, the Marcellus Shale exploration is in its infancy. Terry Engelder, a geoscientist at Penn State University, estimates the reserve could yield as much as 489 trillion cubic feet of gas. The industry's production from Pennsylvania, where drilling is most active, is approaching 100 billion cubic feet.

Wastewater from drilling has not threatened plans to develop the nation's other gas reserves. Brine is injected into deep underground wells in states such as Louisiana, Texas and Oklahoma, or left in evaporation ponds in arid states such as Colorado and Wyoming.

However, many doubt that the hard Appalachian geology is porous enough to absorb all the wastewater, and the climate is too humid for evaporating ponds. That leaves recycling as the most obvious option.

Entrepreneurs are market ing portable systems that distill frack water at the well site.

Also, in southwestern Pennsylvania, Range Resources Corp., one of the gas field's most active operators, pipes wastewater into a central holding pond, dilutes it with freshwater and reuses it for fracking. Range says the practice saves about $200,000 per well, or about 5 percent.

In addition, a $15 million treatment plant that distills frack water is opening in Fairmont, W.Va. The 200,000 gallons it can treat each day then can be trucked back for use at a new drilling site.

For years, regulators let sewage-treatment plants take mining and drilling wastewater under the assumption that rivers would safely dilute it. But fracking a horizontal well requires huge amounts of water: as much as 5 million gallons per well, compared with 50,000 gallons in some conventional wells.

"In this case," said John Keeling of MSES Consultants, which designed the Fairmont plant, "dilution is not the solution to pollution."

OHIO DEPARTMENT OF HEALTH

[illegible]

[illegible]

Ted Strickland, Governor

Alvin D. Jackson, MD, Director of Health

To: Requesting Organization / Representative

WEEKLY EFFLUENT RESULTS -

Subject: Request for Regulatory Concurrence

Chapter 3748 of the Ohio Revised Code (ORC) and Ohio Administrative Code (OAC) rules adopted there under establish that the Ohio Department of Health, Bureau of Radiation Protection (ODH/BRP) is the State of Ohio Radiation Control Agency and the licensing agency for possession and use of radioactive materials. However, there are certain types and quantities of radioactive materials that are exempt from ODH/BRP licensing requirements. Individuals or organizations seeking to dispose of radioactive materials that they have determined are exempt from ODH/BRP licensure may elect to submit a written request for ODH/BRP regulatory concurrence. Please be advised that the disposal facility owner/operator has the final decision on whether or not a waste is acceptable for disposal at their facility. ODH/BRP will render a regulatory position on subject materials provided by the requesting organization. The minimum required information is as follows:

1. Identify the specific OAC regulations that you have determined applies to the material in question.

   - OAC 3701-39-02.1, **Standards for Handling Radioactive Material**
   - OAC 3701:1-44-09, **Unimportant Quantities of Source Material**
   - OAC 3701:1-40-08, Exempt Concentrations and Appendix
   - OAC 3701:1-40-09, Certain Items Containing Byproduct or Accelerator Produced Material
   - OAC 3701:1-40-11, Exempt Quantities and Appendix
   - OAC 3701:1-40-12, Self-Luminous products
   - OAC 3701:1-40-13, Gas and Aerosol Detectors Containing Byproduct or Accelerator Produced Material

2. Provide a detailed history of the subject material including but not limited to:

   - Where did it come from?
   - What was it used for?
   - Who currently possesses it or controls access to it? (Name, address, phone)
   - Where is the subject material physically located right now?
   - If it's not physically located in Ohio, what (if any) has been the host state's involvement thus far? (include host state contact information)

3. Provide a detailed physical description of the subject material including, but not limited to:

   - Physical size (provide dimensions)
   - Photographs (provide a 360 degree view)
   - MSDS sheets (if any)
   - Physical amount (volume, weight, number of pieces)

4. Provide a detailed radiological analysis of subject material including, but not limited to:

   - Radiological survey results (activity in ccpm and/or dose rates on contact and at 30 cm)
   - Supporting quality assurance (calibration records, source checks, surveyor credentials)
   - Radioisotopic analysis of material (HPGe Gamma specific printout or alpha spectroscopy with radionuclide identifications and concentrations)
   - Supporting quality assurance (calibration records, results, spikes, duplicates, operator credentials)

Upon receipt of a request for regulatory concurrence, ODH/BRP will evaluate the documentation submitted and make a determination of whether or not we agree that the subject material is exempt from the cited OAC licensing requirement. Upon completion of our review, a letter of regulatory concurrence or non-concurrence will be issued to each requesting organization.

If you have any question, please contact Jim Colleli of my staff at 614-728-0882 direct or E-mail: Jim.Colleli@ odh.ohio.gov .

Sincerely,

Chuck McCracken, Supervisor
Decommissioning & waste Management
Ohio Department of Health
Bureau of Radiation Protection

3701:1-38-19 Waste disposal.

(A) A licensee shall dispose of licensed radioactive material in accordance with this rule. Licensed material shall be disposed of in one of the following manners:

(1) By transfer to an authorized recipient as provided in this chapter, Chapter 3701:1-40 of the Administrative Code, or to the United States department of energy;

(2) By decay in storage provided that the radionuclide has a half-life of one hundred twenty days or less, or as otherwise permitted by the license;

(3) By release in effluents within the limits set forth in rule 3701:1-38-13 of the Administrative Code; or

(4) As authorized pursuant to paragraphs (B) to (F) of this rule.

(B) A person shall be specifically licensed to receive waste containing licensed material from another person for:

(1) Treatment prior to disposal;

(2) Treatment or disposal by incineration;

(3) Decay in storage;

(4) Disposal at a land disposal facility licensed pursuant to rules 3701:1-54-06 to 3701:1-54-12 of the Administrative Code; or

(5) Storage until transfer to a storage or disposal facility authorized to receive the waste.

(C) A licensee or applicant for a license may apply to the director for approval of proposed disposal procedures that are not otherwise authorized in these rules for the disposal of licensed material generated in the licensee's operations. Each application shall include:

(1) A description of the waste containing licensed material to be disposed of, including the physical and chemical properties that have an impact on risk evaluation, and the proposed manner and conditions of waste disposal;

(2) An analysis and evaluation of pertinent information on the nature of the environment;

(3) The nature and location of other potentially affected facilities; and

(4) An analysis and procedures to ensure that doses are maintained ALARA and within the dose limits in rules 3701:1-38-12 and 3701:1-38-13 of the Administrative Code.

(D) A licensee may discharge licensed material into sanitary sewerage as follows:

(1) The material is readily soluble in water or is a biological material that is readily dispersible in water;

(2) The quantity of licensed or other radioactive material that the licensee releases into the sewer in one month divided by the average monthly volume of water released into the sewer by the licensee does not exceed the concentration listed in table III of appendix C to rule 3701:1-38-12 of the Administrative Code; and

(3) If more than one radionuclide is to be released, the following conditions must also be satisfied:

(a) The licensee shall determine the fraction of the limit in table III of appendix C to rule 3701:1-38-12 of the Administrative Code represented by discharges into sanitary sewerage by dividing the actual monthly average concentration of each radionuclide released by the licensee into the sewer by the concentration of that radionuclide listed in table III of appendix C to rule 3701:1-38-12 of the Administrative Code; and

(b) The sum of the fractions for each radionuclide required by paragraph (D)(3)(a) of this rule does not exceed unity.

(4) The total quantity of licensed and other radioactive material that the licensee releases into the sanitary sewerage in a year does not exceed one hundred eighty-five gigabecquerels (five curies) of hydrogen-3, thirty-seven gigabecquerels (one curie) of carbon-14, and thirty-seven gigabecquerels (one curie) of all other radioactive materials combined.

(5) Excreta from an individual undergoing medical diagnosis or therapy with radioactive material is not subject to the limitations contained in paragraph (D) of this rule.

(E) A licensee may dispose of licensed material by decay in storage. A licensee may hold radioactive material with a physical half-life of one hundred twenty days or less for decay-in-storage before disposal as non-radioactive material provided the licensee does the following:

(1) Monitors the material at the container surface prior to disposal and determines that the radioactivity cannot be distinguished from the background radiation level with an appropriate radiation detection survey meter set on its most sensitive scale and with no interposing shielding;

(2) Removes or obliterates all radiation caution labels and symbols, unless otherwise specified in the license; and

(3) Retains a record of the disposal for three years.

(F) A licensee may treat or dispose of licensed material by incineration only in the form and concentration specified in paragraph (G) of this rule or as specifically approved by the director pursuant to paragraph (C) of this rule.

(G) A licensee may dispose of the following licensed material as if it were not radioactive. The licensee shall maintain records in accordance with paragraph (K) of rule 3701:1-38-20 of the Administrative Code.

(1) 1.85 kilobecquerels (0.05 microcurie) or less, of hydrogen-3 or carbon-14 per gram of medium used for liquid scintillation counting; or

(2) 1.85 kilobecquerels (0.05 microcurie) µ or less, of hydrogen-3 or carbon-14 per gram of animal tissue, averaged over the weight of the entire animal. A licensee shall not dispose of tissue pursuant to this paragraph in a manner that would permit its use either as food for humans or as animal feed.

(H) A licensee shall transfer and dispose of licensed material in accordance with the following:

(1) For transfer of radioactive waste intended for disposal at a licensed radioactive waste disposal facility, establish a manifest tracking system, and supplement existing requirements concerning transfers and recordkeeping for those wastes. Each shipment of radioactive waste designated for disposal at a licensed radioactive waste disposal facility shall be accompanied by a shipment manifest as specified in appendix A to this rule.

(2) Each shipment manifest shall include a certification by the waste generator in accordance with appendix A to this rule.

(3) Each person involved in the transfer of waste for disposal or in the disposal of waste, including the waste generator, waste collector, waste processor, and disposal facility operator, shall comply with the requirements specified in appendix A to this rule.

(I) Nothing in this rule relieves a licensee from complying with other applicable federal, state and local regulations governing any other toxic or hazardous properties of materials that may be disposed of under this rule.

APPENDIX A

Requirements for transfer of radioactive waste for disposal at land disposal facilities and manifests

I. Manifest

A waste generator, collector, or processor who transports, or offers for transportation, radioactive waste intended for ultimate disposal at a licensed radioactive waste land disposal facility must prepare a Shipment Manifest. Licensees are not required to comply with the manifesting requirements of this part when they ship:

(A) Radioactive waste for processing and expect its return for storage under their license prior to disposal at a licensed land disposal facility;

(B) Radioactive waste that is being returned to the licensee who is the "waste generator" or "generator," as defined in this part; or

(C) Radioactively contaminated material to a "waste processor" that becomes the processor's "residual waste."

For guidance in completing these forms, refer to the instructions that accompany the forms.

Copies of manifests required by this appendix may be legible carbon copies, photocopies, or computer printouts that reproduce the data in the format of the shipment manifest.

This appendix includes information requirements of the United States department of transportation, as codified in 49 C.F.R. 172. Information on hazardous, medical, or other waste, required to meet United States environmental protection agency regulations, as codified in 40 C.F.R. Parts 259, 261 or elsewhere, is not addressed in this section, and must be provided on the required EPA forms. However, the required EPA forms must accompany the Radioactive Waste Shipment Manifest required by this rule.

As used in this appendix, the following definitions apply:

Chelating agent means amine polycarboxylic acids (including but not limited to EDTA and DTPA), hydroxy-carboxylic acids, and polycarboxylic acids (including but not limited to citric acid, carbolic acid, and glucinic acid).

Chemical description means a description of the principal chemical characteristics of a radioactive waste.

Computer-readable medium means that the Bureau's computer can transfer the information from the medium into its memory.

Consignee means the designated receiver of the shipment of radioactive waste.

Decontamination facility means a facility operating under a nuclear regulatory commission or agreement state license whose principal purpose is decontamination of equipment or materials to accomplish recycle, reuse, or other waste management objectives, and, for purposes of this part, is not considered to be a consignee for radioactive waste shipments.

Disposal container means a container principally used to confine radioactive waste during disposal operations at a land disposal facility (also see "high integrity container"). Note that for some shipments, the disposal container may be the transport package.

EPA identification number means the number received by a transporter following application to the administrator of EPA as required by 40 C.F.R. 263.

Generator means a licensee operating under a nuclear regulatory commission or agreement state license who (1) is a waste generator as defined in this part, or (2) is the licensee to whom waste can be attributed to.

High integrity container (HIC) means a container commonly designed to meet the structural stability requirements of rule 3701:1-54-10 of the Administrative Code 10 C.F.R. 61.56 as referenced by 3701-39-02.1, and to meet United States department of transportation requirements for a Type A package.

Land disposal facility means the land, buildings and structures, and equipment that are intended to be

used for the disposal of radioactive waste.

Package means the assembly of components necessary to ensure compliance with the packaging requirements of United States department of transportation regulations, together with its radioactive contents, as presented for transport.

Physical description means the items called for on Radioactive Waste Shipment Manifest form "Container and Waste Description" to describe the radioactive waste.

Radioactive Waste Shipment Manifest means forms provided by the director consistent with

NRC Forms 540 & 540A (Shipping Papers), 541 & 541A (Container and Waste Description), and 542 & 542A (Manifest Index and Regional Compact Tabulation). Licensees need not use originals of these forms as long as any substitute forms are equivalent to the original documentation in respect to content, clarity, size, and location of information. Upon agreement between the shipper and consignee, Shipment Manifest forms "Container and

Waste Description" and "Manifest Index and Regional Compact Tabulation" may be completed, transmitted, and stored in electronic media. The electronic media must have the capability for producing legible, accurate, and complete records in the format of the shipment manifest.

Residual waste means radioactive waste resulting from processing or decontamination activities that cannot be easily separated into distinct batches attributable to specific waste generators. This waste is attributable to the processor or decontamination facility, as applicable.

Shipment manifest – see Radioactive Waste Shipment Manifest

Shipper means the licensed entity including, but not limited to, the waste generator, waste collector, or waste processor, who offers radioactive waste for transportation, typically consigning this type of waste to a licensed waste collector, waste processor, or land disposal facility operator.

Shipping paper means the Radioactive Waste Shipping Manifest form "Shipping Papers" which includes the information required by the United States department of transportation in 49 C.F.R. Part 172.

Source material has the same meaning as that given in rule 3701:1-38-01 of the Administrative Code. 10 C.F.R. 40.4 as referenced by 3701-39-02.1.

Special nuclear material has the same meaning as that given in rule 3701:1-38-01 of the Administrative Code. 10 C.F.R. 70.4 as referenced by 3701-39-02.1.

Waste collector means an entity, operating under a nuclear regulatory commission or agreement state license, whose principal purpose is to collect and consolidate waste generated by others, and to transfer this waste, without processing or repackaging the collected waste, to another licensed waste collector, licensed waste processor, or licensed land disposal facility.

Waste description means the physical, chemical and radiological description of a radioactive waste as called for on Shipment Manifest form "Container and Waste Description".

Waste generator means an entity, operating under a nuclear regulatory commission or agreement state license, who (1) possesses any material or component that contains radioactivity or is radioactively contaminated for which the licensee foresees no further use, and (2) transfers this material or component to a licensed land disposal facility or to a licensed waste collector or processor for handling or treatment prior to disposal. A licensee performing processing or decontamination services may be a "waste generator" if the transfer of radioactive waste from its facility is defined as "residual waste."

Waste processor means an entity, operating under a nuclear regulatory commission or agreement state license, whose principal purpose is to process, repackage, or otherwise treat radioactive material or waste generated by others prior to eventual transfer of waste to a licensed radioactive waste land disposal facility.

Waste type means a waste within a disposal container having a unique physical description (a specific waste descriptor code or description; or a waste sorbed on or solidified in a specifically defined media).

Information Requirements

A. General Information

The shipper of the radioactive waste, shall provide the following information on the Shipment Manifest:

1. The name, facility address, and telephone number of the licensee shipping the waste;

2. An explicit declaration indicating whether the shipper is acting as a waste generator, collector, processor, or a combination of these identifiers for purposes of the manifested shipment; and

3. The name, address, and telephone number, or the name and EPA identification number for the carrier transporting the waste.

B. Shipment Information

The shipper of the radioactive waste shall provide the following information regarding the waste shipment on the Shipment Manifest:

1. The date of the waste shipment;

2. The total number of packages/disposal containers;

3. The total disposal volume and disposal weight in the shipment;

4. The total radionuclide activity in the shipment;

5. The activity of each of the radionuclides H-3, C-14, Tc-99, and I-129 contained in the shipment; and

6. The total masses of U-233, U-235, and plutonium in special nuclear material, and the total mass of uranium and thorium in source material.

C. Disposal Container and Waste information

The shipper of the radioactive waste shall provide the following information on the Shipment

Manifest regarding the waste and each disposal container of waste in the shipment:

1. An alphabetic or numeric identification that uniquely identifies each disposal container in the shipment;

2. A physical description of the disposal container, including the manufacturer and model of any high integrity container;

3. The volume displaced by the disposal container;

4. The gross weight of the disposal container, including the waste;

5. For waste consigned to a disposal facility, the maximum radiation level at the surface of each disposal container;

6. A physical and chemical description of the waste;

7. The total weight percentage of chelating agent for any waste containing more than 0.1% chelating agent by weight, plus the identity of the principal chelating agent;

8. The approximate volume of waste within a container;

9. The sorbing or solidification media, if any, and the identity of the solidification media vendor and brand name;

10. The identities and activities of individual radionuclides contained in each container, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material. For discrete waste types (including but not limited to activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides associated with or contained on these waste types within a disposal container shall be reported;

11. The total radioactivity within each container; and

12. For wastes consigned to a disposal facility, the classification of the waste pursuant to rule 3701:1-54-10 of the Administrative Code. 10 C.F.R. 61.55 as referenced by 3701-39-02.1. Waste not meeting the structural stability requirements of paragraph (B)(9) of rule 3701:1-54-10 of the Administrative Code 10 C.F.R. 61.56(b) as referenced by 3701-39-02.1 must be identified.

D. Uncontainerized Waste information

The shipper of the radioactive waste shall provide the following information on the Shipment

Manifest regarding a waste shipment delivered without a disposal container:

1. The approximate volume and weight of the waste;

2. A physical and chemical description of the waste;

3. The total weight percentage of chelating agent if the chelating agent exceeds 0.1% by weight, plus the identity of the principal chelating agent;

4. For waste consigned to a disposal facility, the classification of the waste pursuant to rule 3701:1-54-10 of the Administrative Code. 10 C.F.R. 61.55 as referenced by 3701-39-02.1. Waste not meeting the structural stability requirements of paragraph (B)(9) of rule 3701:1-54-10 of the Administrative Code 10 C.F.R. 61.56(b) as referenced by 3701-39-02.1 must be identified;

5. The identities and activities of individual radionuclides contained in the waste, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material; and

6. For wastes consigned to a disposal facility, the maximum radiation levels at the surface of the waste.

E. Multi-Generator Disposal Container Information

This section applies to disposal containers enclosing mixtures of waste originating from different generators. (Note: The origin of the radioactive waste resulting from a processor's activities may be attributable to one or more "generators" (including "waste generators") as defined in this appendix). It also applies to mixtures of wastes shipped in an uncontainerized form, for which portions of the mixture within the shipment originate from different generators.

1. For homogeneous mixtures of waste, such as incinerator ash, provide the waste description applicable to the mixture and the volume of the waste attributed to each generator.

2. For heterogeneous mixtures of waste, such as the combined products from a large compactor, identify each generator contributing waste to the disposal container, and, for discrete waste types (including but not limited to, activated materials, contaminated equipment, mechanical filters, sealed source/devices, and wastes in solidification/stabilization media), the identities and activities of individual radionuclides contained on these waste types within the disposal container. For each generator, provide the following:

(a) The volume of waste within the disposal container;

(b) A physical and chemical description of the waste, including the solidification agent, if any;

(c) The total weight percentage of chelating agents for any disposal container containing more than 0.1% chelating agent by weight, plus the identity of the principal chelating agent;

(d) The sorbing or solidification media, if any, and the identity of the solidification media vendor and

brand name if the media is claimed to meet stability requirements in paragraph (B)(9) of rule 3701:1-54-10 of the Administrative Code; 10 C.F.R. 61.56(b) as referenced by 3701-39-02.1; and

(e) Radionuclide identities and activities contained in the waste, the masses of U-233, U-235, and plutonium in special nuclear material, and the masses of uranium and thorium in source material if contained in the waste.

II. Certification

An authorized representative of the waste generator, processor, or collector shall certify by signing and dating the shipment manifest that the transported materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the U.S. DOT, the U.S. nuclear regulatory commission, and the department. A collector in signing the certification is certifying that nothing has been done to the collected waste, which would invalidate the waste generator's certification.

III. Control and Tracking

A. Any licensee who transfers radioactive waste to a land disposal facility or a licensed waste collector shall comply with the requirements in paragraphs A.1 through 9 of this section. Any licensee who transfers waste to a licensed waste processor for waste treatment or repackaging shall comply with the requirements of paragraphs A.4 through 9 of this section. A licensee shall:

1. Prepare all wastes so that the waste is classified according to rule 3701:1-54-10 of the Administrative Code 10 C.F.R. 61.55 as referenced by 3701-39-02.1, and meets the waste characteristics requirements in rule 3701:1-54-10 of the Administrative Code; 10 C.F.R. 61.56 as referenced by 3701-39-02.1;

2. Label each disposal container (or transport package if potential radiation hazards preclude labeling of the individual disposal container) of waste to identify whether it is Class A waste, Class B waste, Class C waste, or greater then Class C waste, in accordance with rule 3701:1-54-10 of the Administrative Code; 10 C.F.R. 61.55 as referenced by 3701-39-02.1;

3. Conduct a quality assurance program to assure compliance with rule 3701:1-54-10 of the Administrative Code 10 C.F.R. 61.55 and 61.56 as referenced by 3701-39-02.1 (The program must include management evaluation of audits);

4. Prepare the Radioactive Waste Shipment Manifest as required by this appendix;

5. Forward a copy or electronically transfer the Radioactive Waste Shipment Manifest to the intended consignee so that either (I) receipt of the manifest precedes the radioactive waste shipment or (II) the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both (I) and (II) is also acceptable;

6. Include Shipment Manifest form "Shipping Paper" with the shipment regardless of the option chosen in paragraph A.5 of this section;

7. Receive acknowledgement of the receipt of the shipment in the form of a signed copy of Shipment Manifest form "Shipping Paper";

8. Retain a copy of or electronically store the Radioactive Waste Shipment manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by rules 3701:1-40-21, 3701:1-44-23, and 3701:1-56-10 of the Administrative Code; 10 C.F.R. Parts 30, 40, and 70 as referenced by 3701-39-02.1; and

9. For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this appendix, conduct an investigation in accordance with paragraph E of this appendix.

B. Any waste collector licensee who handles only prepackaged waste shall:

1. Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of Shipment Manifest form "Shipping Paper";

2. Prepare a new manifest to reflect consolidated shipments that meet the requirements of this appendix. The waste collector shall ensure that, for each container of waste in the shipment, the manifest identifies the generator of that container of waste;

3. Forward a copy or electronically transfer the Radioactive Waste Shipment Manifest to the intended consignee so that either: (I) receipt of the manifest precedes the radioactive waste shipment or (II) the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both (I) and (II) is also acceptable;

4. Include Shipment Manifest form "Shipping Paper" with the shipment regardless of the option chosen in paragraph B.3 of this section;

5. Receive acknowledgement of the receipt of the shipment in the form of a signed copy of Shipment Manifest form "Shipping Paper";

6. Retain a copy of or electronically store the Radioactive Waste Shipment Manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by rules 3701:1-40-21, 3701:1-44-23, and 3701:1-56-10 of the Administrative Code;10 C.F.R. Parts 30, 40, and 70 as referenced by 3701-39-02.1;

7. For any shipments or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this appendix, conduct an investigation in accordance with paragraph E of this appendix; and

8. Notify the shipper and the department of health, bureau of radiation protection (phone 614-644-2727) when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been cancelled.

C. Any licensed waste processor who treats or repackages waste shall:

1. Acknowledge receipt of the waste from the shipper within one week of receipt by returning a signed copy of Shipment Manifest form "Shipping Paper";

2. Prepare a new manifest that meets the requirements of this appendix. Preparation of the new manifest reflects that the processor is responsible for meeting these requirements. For each container of waste in the shipment, the manifest shall identify the waste generators, the preprocessed waste volume, and the other information as required in paragraph i.e. of this appendix;

3. Prepare all wastes so that the waste is classified according to rule 3701:1-54-10 of the Administrative Code 10 C.F.R. 61.55 as referenced by 3701-39-02.1 and meets the waste characteristics requirements in rule 3701:1-54-10 of the Administrative Code; 10 C.F.R. 61.56 as referenced by 3701-39-02.1;

4. Label each package of waste to identify whether it is Class A waste, Class B waste, or Class C waste, in accordance with rule 3701:1-54-10 of the Administrative Code; 10 C.F.R. 61.55 and 61.57 as referenced by 3701-39-02.1;

5. Conduct a quality assurance program to assure compliance with rule 3701:1-54-10 of the Administrative Code 10 C.F.R. 61.55 and 61.56 as referenced by 3701-39-02.1 (The program shall include management evaluation of audits);

6. Forward a copy or electronically transfer the Radioactive Waste Shipment Manifest to the intended consignee so that either: (I) receipt of the manifest precedes the radioactive waste shipment or (II) the manifest is delivered to the consignee with the waste at the time the waste is transferred to the consignee. Using both (I) and (II) is also acceptable;

7. Include Shipment Manifest form "Shipping Paper" with the shipment regardless of the option chosen in paragraph C.6 of this section;

8. Receive acknowledgement of the receipt of the shipment in the form of a signed copy of Shipment Manifest form "Shipping Paper";

9. Retain a copy of or electronically store the Radioactive Waste Shipment Manifest and documentation of acknowledgement of receipt as the record of transfer of licensed material as required by rules 3701:1-40-21, 3701:1-44-23, and 3701:1-56-10 of the Administrative Code;10 C.F.R. Parts 30, 40, and 70 as referenced by 3701-39-02.1;

10. For any shipment or any part of a shipment for which acknowledgement of receipt has not been received within the times set forth in this appendix, conduct an investigation in accordance with paragraph E of this appendix; and

11. Notify the shipper and the department of health, bureau of radiation protection (phone 614-644-2727) when any shipment, or part of a shipment, has not arrived within 60 days after receipt of an advance manifest, unless notified by the shipper that the shipment has been cancelled.

D. The land disposal facility operator shall:

1. Acknowledge receipt of the waste within one week of receipt by returning, as a minimum, a signed copy of Shipment Manifest form "Shipping Paper" to the shipper.

The shipper to be notified is the licensee who last possessed the waste and transferred the waste to the operator. If any discrepancy exists between materials listed on the Radioactive Waste Shipment Manifest and materials received, copies or electronic transfer of the affected forms must be returned indicating the discrepancy;

2. Maintain copies of all completed manifests and electronically store the information required by rule 3701:1-54-12 of the Administrative Code 10 C.F.R. 61.80(i) as referenced in 3701-39-02.1 until the department terminates the license; and

3. Notify the shipper and the department of health, bureau of radiation protection (phone 614-644-2727) when any shipment, or part of a shipment, has not arrived within sixty days after receipt of an advance manifest, unless notified by the shipper that the shipment has been cancelled.

E. Any shipment or part of a shipment for which acknowledgement is not received within the times set forth in this section must:

1. Be investigated by the shipper if the shipper has not received notification or receipt within twenty days after transfer; and

2. Be traced and reported. The investigation shall include tracing the shipment and filing a report with the department of health, bureau of radiation protection (phone 614-644-2727). Each licensee who conducts a trace investigation shall file a written report with the department of health bureau of radiation protection within two weeks of completion of the investigation.

Effective: 10/22/2006

R.C. 119.032 review dates: 07/13/2006 and 06/01/2011

Promulgated Under: 119.03

Statutory Authority: 3748.04

Rule Amplifies: 3748.04

Prior Effective Dates: 7/22/2001, 6/20/03

Robert Leidy

From: Stephen Helmer
Sent: Thursday, March 11, 2010 1:48 PM
To: Robert Leidy
Subject: FW: Warren WWTP Brine

Rob,

See what you can do to work with OEPA North East District Office (NEDO).
Let me know when you make contact/arrangements.

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Program Administrator
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Phone: 614-728-3611

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Ph: 614.466.5136
Fx: 614.466.0381

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To Stephen Helmer
Cc Kenneth Barnhart; Chuck McCracken
Subject FW: Warren WWTP Brine

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What I really need to know is what specific information the Bureau wants me to obtain while there. Sample results or survey results, shipping documents?

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I'll touch base with you while I'm at Euclid Hospital.

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1-5 Attached to this

Robert Leidy

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Attachments: TENORM DRAFT PROCEDURE.doc; Request for Reg Concurence.pdf; OAC 3701-39-02 1.pdf; Meeting 2.25.10.doc; Meeting 3.2.10.doc

Thanks Rob.
It sure is good to have you working out of the Akron office.
Make sure you read what is below.
The sampling method and periodicity are key as Chuck is indicating.
Right now we are looking to understand and establish an acceptable process.

One issues is what Chuck indicated below:
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There are other issuses involved here. This is bascially a NORM/TENORM issue.
See also Exemptions out of OAC 3701-39

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