

WEST VIRGINIA ENVIRONMENTAL QUALITY BOARD  
CHARLESTON, WEST VIRGINIA

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Environmental Quality  
Board

LACKAWANNA TRANSPORT COMPANY,  
d/b/a WETZEL COUNTY LANDFILL and  
FLUID MANAGEMENT SOLUTIONS, INC.

Appellants,

v.

Appeal No.: 24-04-EQB

DIRECTOR, DIVISION OF WATER  
AND WASTE MANAGEMENT,  
WEST VIRGINIA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

Appellee.

NOTICE OF APPEAL AND REQUEST FOR STAY

COMES NOW Lackawanna Transport Company, d/b/a Wetzel County Landfill (hereinafter "Wetzel Landfill") and Fluid Management Solutions, Inc. (hereinafter "FMS") (together the "Appellants"), by counsel, Armando F. Benincasa, Marissa G. Nortz, Allyn G. Turner, and the law firm of Steptoe & Johnson PLLC, and respectfully represent that they are aggrieved by Appellee West Virginia Department of Environmental Protection's (hereinafter "Appellee" or "WVDEP") denial of Wetzel Landfill's Minor Permit Modification Renewal (hereinafter "FMS Renewal") request to accept and dispose of special waste as generated by FMS and WVDEP's denial of Wetzel Landfill's Minor Permit Modification to accept and dispose of special waste as generated by Rehydro LTD (hereinafter "Rehydro denial"). The FMS Renewal denial and the Rehydro denial were received by Wetzel Landfill on February 20, 2024.

Pursuant to West Virginia Code § 22-15-16, Appellants timely file this Notice of Appeal with the West Virginia Environmental Quality Board (hereinafter "Board") and further pray that this matter be reviewed and that this Board grant the following relief:

1. Rescind WVDEP's denial of the FMS Renewal and Rehydro denial and Order that WVDEP grant Wetzel Landfill's request to accept and dispose of special waste generated from FMS and Rehydro for the reasons set forth more thoroughly in *Attachment A* hereto; and
2. A stay of WVDEP's FMS Renewal denial and the Rehydro denial pending the resolution of this Appeal as described in Appellants' Motion for Stay filed contemporaneously herewith.

The facts alleged relevant to this Appeal and the particular grounds on which this Appeal is based, including questions of fact and law to be determined by this Board, are set forth in detail in numbered paragraphs and attached hereto as *Attachment A*.

Amendment of this Notice of Appeal may be had only by leave of this Board for good cause shown.

Date this 20<sup>th</sup> day of March, 2024.

**Respectfully submitted,**

**Lackawanna Transport Company, d/b/a  
Wetzel County Landfill, and Fluid  
Management Solutions, Inc.**

**By counsel:**



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Management Solutions, Inc.*

## ATTACHMENT A

### **I. Introduction**

#### **A. Parties to the Appeal**

##### **1. Wetzel Landfill**

Wetzel Landfill is a commercial solid waste facility in New Martinsville, West Virginia, and provides critical disposal, stabilization, and container storage services relating to oil and gas wastes from the Marcellus/Utica Shale industry. In addition to standard solid waste disposal services, the Wetzel Landfill is permitted and designed to provide disposal cells dedicated solely to the disposal of oil and gas waste. Wetzel Landfill offers the following disposal services:

- Oil, synthetic based drill cuttings (wet or dry)
- Water, air-based drill cuttings
- Fracking completion waste
- Directional drill cuttings, soil borings (wet or dry)
- Midstream waste
- Frac sand waste
- Produced water sludge
- Flowback waste
- Process waste

Wetzel Landfill routinely obtains minor permit modifications from WVDEP for the acceptance and disposal of special wastes in accordance with W. Va. Code § 22-15-1 *et seq.*, and W. Va. Code R. §§ 33-1-1 *et seq.* and 33-1A-1 *et seq.* Wetzel Landfill has been obtaining these minor permit modifications from WVDEP for the acceptance of special wastes, including completion or production wastes and drill cuttings and associated drilling waste generated within the oil and gas industry, for approximately seven (7) or more years.

##### **2. Fluid Management Solutions, Inc.**

FMS works jointly with the oil and gas industry to provide oil and gas waste reuse, recycling, and disposal options. FMS takes waste generated from oil and gas operations and refines the fluids so that the liquids can be reused/recycled for:

- Brine for drilling operations
- Drilling mud
- Truck wash outs
- Disposal at saltwater disposal facilities; and/or
- Discharge to a local publicly owned treatment works as industrial waste

The remaining solids are then properly disposed of at a properly permitted solid waste facility, including the Wetzel Landfill, in accordance with all applicable West Virginia statutes and regulations.

FMS has been disposing of oil and gas completion or production waste at the Wetzel Landfill since at least February of 2023 when Wetzel Landfill was granted authorization from WVDEP to accept oil and gas completion or production waste from FMS through a minor permit modification. WVDEP subsequently denied Wetzel Landfill's minor permit modification to accept these same wastes in 2024, which serves as the basis for this appeal as detailed herein.

**B. WVDEP's Denial of Wetzel Landfill's Minor Permit Modification to Accept and Dispose of Special Waste Generated by FMS**

On January 2, 2024, Wetzel Landfill submitted to WVDEP a Minor Permit Modification Renewal Application (hereinafter "Renewal") for the acceptance and disposal of special wastes, specifically oil and gas completion or production wastes, from FMS. *See Attachment B.* On February 20, 2024, Wetzel Landfill received notice that its FMS Renewal was being denied for the following reasons:

The application for a minor permit modification to accept this waste is DENIED for the reason(s) indicated below. This/these problem(s) must be resolved satisfactorily and a new application submitted before a permit modification will be issued for this waste.

3. Comments: The disposal of radioactive waste in a solid waste facility or in a commercial solid waste facility, as defined in section two, article fifteen, chapter twenty-two of this code, is prohibited.

*See Attachment C.* On January 9, 2024, Wetzel Landfill submitted to WVDEP a Minor Permit Modification for the acceptance and disposal of special wastes, specifically oil and gas completion or production wastes, from Rehydro LTD (hereinafter “Rehydro”). *See Attachment D.* On February 20, 2024, Wetzel Landfill received noticed that its minor permit modification for the acceptance of special wastes from Rehydro was also being denied (hereinafter “Rehydro denial”) for the same reasons detailed in FMS’s Renewal denial. *See Attachment E.*

Wetzel Landfill and FMS now timely appeal WVDEP’s FMS Renewal denial and the Rehydro Denial as issued to Wetzel Landfill on February 20, 2024. The denials that make up the basis of this appeal are included herein as *Attachment C* and *Attachment E*.

**II. Questions of Fact and Law**

**1. As a matter of fact and law, did WVDEP act appropriately in denying Wetzel Landfill’s Minor Permit Modifications to accept and dispose of special waste generated by FMS and Rehydro?**

**A. The acceptance and disposal of certain radioactive material, including oil and gas wastes, is directly permitted under WVDEP’s own legislative rules.**

**1) The acceptance and disposal of oil and gas completion or production wastes is directly permitted under West Virginia Code of State Rules § 33-1A-1 et seq.**

WVDEP’s assertion that Wetzel Landfill is prohibited from accepting oil and gas completion or production wastes from FMS and Rehydro because such wastes are radioactive is completely baseless and contradictory to established law. A simple review of WVDEP’s own rules reveals that such wastes can be accepted and disposed at solid waste facilities and specifically details how the de minimis radiation from these wastes must be managed:

3.1. *Prior to the acceptance and disposal of completion or production waste,<sup>1</sup> a permittee shall apply for and obtain a special waste minor permit modification in accordance with subsection 4.13 of the Solid Waste Management Rule.*

3.2. *The permittee shall dispose of all completion or production wastes in a cell(s) dedicated solely to the disposal of drill cuttings and associated drilling waste, as established in the West Virginia Solid Waste Management Act and the Solid Waste Management Rule.*

3.3. *The permittee shall comply with all liner system requirements set forth in the Solid Waste Management Rule related to the construction of separate cells for the disposal of drill cuttings and associated drilling waste and all radiation monitoring requirements set forth in Section 3.5 below.*

#### 3.4. *Waste Profiling Requirements*

3.4.a. *The facility must obtain from the generator results from at least one representative composite sample of the waste, unless otherwise approved by the Secretary. At a minimum, the facility must submit the following analyses with each application for a special waste minor permit modification: Toxicity Characterization Leaching Procedure (TCLP) Metals, EPA Method 1311; TCLP Volatile Organic Compounds, EPA Method 8260B; and parameters must not exceed the limits of 40 C.F.R. § 261.24. The facility must also submit analyses for Total Petroleum Hydrocarbons (TPH), EPA Method 8015C, and Percent Solids, EPA Method Number 160.3 or 2540.*

3.4.b. *In addition to analyses set forth in subdivision 3.4.a above, the permittee must analyze each load of completion or production waste entering the facility for the combined concentration of Radium 226 and Radium 228, and each load shall be accompanied by the test results for that load. The analysis must be done by a laboratory certified by the Department's Environmental Laboratories Certification program. If the combined concentration in the waste is less than or equal to fifty picocuries per gram (50*

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<sup>1</sup> The West Virginia Code of State Rules defines completion or production waste as:

[W]astes generated during the completion or production processes or derived from the hydraulic fracturing process associated with horizontal natural gas well development, including without limitation, flowback solids, brine, tank bottoms, pit cleanout material and sludges, filters and filter media, pipe scale and used fracturing sand and proppants. Completion or production waste does not include any waste containing radioactive tracers regulated by the Nuclear Regulatory Commission (NRC), unless the generator of the waste has obtained permission from the NRC to dispose of this waste in a West Virginia landfill.

*pCi/gr.), the facility may accept the waste for disposal. If the values are greater than 50 pCi/gr, the facility shall reject the load.*

### *3.5 Radiation Monitoring*

*3.5.a. The facility must also have a portable radiation monitor capable of determining dose rate and the presence of contamination on a vehicle. The facility shall provide staff with documented training in the operation of all onsite radiation monitors.*

*3.5.b. The radiation monitor installed at the facility pursuant to the Solid Waste Management Rule must be capable of measuring exposure rates from ten microroentgens per hour (10  $\mu$ R/hr) to greater than fifty milliroentgens per hour (>50 mR/hr) (or equivalent units). The instrument must be maintained and calibrated according to manufacturer specifications.*

*3.5.c. The detector elements must be configured to be as close as practical to the waste load and in an appropriate geometry to monitor the waste.*

*3.5.d. The facility shall set the detector to sound an alarm if the reading on the detector exceeds 10  $\mu$ R/hr (or equivalent units) above local background.*

*3.5.e. For each radiation alarm generated for completion or production waste the facility shall document the fixed detector reading and the associated combined concentration of Radium-226 and Radium-228 provided with the load. This information shall be supplied to both the Department and to the West Virginia Department of Health and Human Resources' (DHHR) Radiological Health Program on a monthly basis.*

*3.5.f. Facilities accepting completion or production waste must submit to the DEP a Radiation Monitoring Plan that outlines the facility's procedures for managing the waste.*

W.Va. Code R. § 33-1A-3.1 – 3.5. WVDEP's position, that the disposal of radioactive waste in solid waste facilities in West Virginia is prohibited, is easily defeated and directly contradicted by its own rules. As is made clear, the acceptance and disposal of completion or production wastes contaminated with radiation of up to fifty picocuries per gram is directly permitted for disposal in West Virginia solid waste facilities.

This Board must rescind WVDEP's denial and order that the minor permit modification renewal be issued to Wetzel Landfill for acceptance of special wastes from FMS and that the minor permit modification be issued to Wetzel Landfill for the acceptance of special wastes from Rehydro.

- 2) **In addition to the acceptance and disposal of oil and gas completion or production wastes, WVDEP's Legislative Rules also directly authorize the acceptance and disposal of additional radioactive wastes, specifically oil and gas drill cuttings and associated drilling wastes.**

WVDEP's assertion that "[t]he disposal of radioactive waste material in a solid waste facility . . . is prohibited" applies to not only the disposal of oil and gas completion or production wastes that are the wastes at issue here, but to the disposal of all waste that can be deemed radioactive. As with the oil and gas completion or production wastes, WVDEP's position again fails as its own rules directly contradict its position by authorizing the disposal of radioactive wastes, specifically as it relates to oil and gas drill cuttings and associated drilling wastes:

*5.6 Requirements for the Disposal of Drilling Waste Generated from Horizontal Drill Sites.*

*5.6.a. Definitions*

*5.6.a.1 "Drill Cuttings and Associated Drilling Wastes" means the broken bits of solid material and drilling mud removed from a borehole drilled by rotary, percussion, or auger methods, but does not include wastes generated from the completion process<sup>2</sup> or derived from the hydraulic fracturing process, including but not limited to, flowback solids and liquids, brine, tank bottoms, pit cleanout material and sludges, filters and filter media, pipe scale, used frack sand and proppants, etc.*

*5.6.c Waste Profiling Requirements*

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<sup>2</sup> The completion or production wastes referenced within the drill cuttings and associated drilling waste are covered in a separate WVDEP rule, W. Va. Code R. § 33-1A-1 *et seq.*, which authorizes the methods by which these additional wastes can be disposed as detailed in § II.1.A.1) herein.



*5.6.c.1. Drill Cuttings and Associated Drilling Waste*

*5.6.c.1.A. Prior to the acceptance and disposal of drill cuttings and associated drilling waste, a permittee must apply for and obtain a special waste minor permit modification in accordance with subsection 4.13<sup>3</sup> of this rule.*

*5.6.d Radiation Monitoring*

*5.6.d.1. All Solid Waste Facilities that accept drill cuttings and associated drilling waste for disposal must install fixed radiation detection equipment at the entrance to the facility. All drill cuttings and associated drilling wastes generated in the exploration, production and development of oil and natural gas and associated activities must be evaluated by this equipment. The facility must also have a portable radiation monitor capable of determining dose rate and the presence of contamination on a vehicle. The facility shall provide staff with documented training in the operation of all onsite radiation monitors.*

*5.6.d.2. The fixed detector must be capable of measuring exposure rates from ten microroentgens per hour (10  $\mu$ R/hr) to greater than fifty milliroentgens per hour (>50 mR/hr.). The instrument must be maintained and calibrated according to manufacturer specifications.*

*5.6.d.2 (sic). The detector elements must be configured to be as close as practical to the waste*

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<sup>3</sup> This sections states, in relevant part that:

Except as expressly specified by an order or other written approval by the Secretary, a solid waste facility may receive only those solid wastes allowed by the permit. Facilities may receive solid waste that requires special handling methods for processing or disposal only by specific provisions within the facility permit, by obtaining a minor permit modification, or by obtaining other express written approval from the Secretary. If it is not clear that a particular waste is within the authorized wastes that a permitted facility may receive, the permittee must request and receive a minor permit modification or letter of permission from the Secretary before receiving the waste.

*load and in an appropriate geometry to monitor the waste.*

*5.6.d.3. The facility shall set the detector to sound an alarm if the reading on the detector exceeds 10 $\mu$ R/hr. above local background.*

*5.6.d.4. If a load of drilling cuttings or associated drilling waste is confirmed to be less than ten microroentgens per hour (10  $\mu$ R/hr.) above local background level, the waste may be disposed of in the facility. If the load of waste is confirmed to be equal to or greater than 10  $\mu$ R/hr. above local background level, the combined concentration of Radium 226 and Radium 228 must be determined. The combined concentration must be analyzed by a State approved method. If the combined concentration in the waste is less than five picocuries per gram (5pCi/gr.) above local background level, the waste may be disposed in the facility. If the values are greater than 5pCi/gr. above local background level, the load must be rejected.*

*5.6.d.5. For each radiation alarm generated the facility shall provide an incident report to both the West Virginia Department of Environmental Protection (DEP) and West Virginia Department of Health and Human Resources (DHHR) Radiological Health Program using Form 1W Solid Waste Radioactivity Reporting Form within 24 hours of the initial alarm. Form 1W can be obtained by contacting the DHHR Radiological Health Program.*

*5.6.d.6. Solid Waste facilities accepting drill cuttings and associated wastes must submit and obtain approval from both the DEP and the DHHR Radiological Health Program of a Radiation Monitoring Plan that outlines the facility's procedures for managing the waste.*

W. Va. Code R. §§ 33-1-5.6.a.1, 33-1-5.6.c.1.A, and 33-1-5.6.d.

WVDEP's position in this matter is completely arbitrary, as a simple review of its own rules makes clear that WVDEP has: (1) authorized the disposal of radioactive wastes in solid waste

facilities in this State; and (2) authorized the disposal of the special wastes at issue here, oil and gas completion or production wastes, in solid waste facilities in this State. WVDEP's broad position that radioactive waste materials are prohibited from disposal in solid waste facilities is unsupported and contradictory to established law.

Appellants request that this Board rescind WVDEP's FMS Renewal denial and the Rehydro denial.

**B. WVDEP has previously issued Minor Permit Modifications to Wetzel Landfill for the acceptance and disposal of oil and gas completion or production waste from FMS.**

Contrary to its new and unfounded position that the disposal of radioactive waste materials in solid waste facilities is prohibited, WVDEP has previously issued such minor permit modifications to landfills seeking to accept completion or production special wastes, including the issuance of several of these modifications to Wetzel Landfill that are currently active. Importantly, WVDEP issued a minor permit modification to Wetzel Landfill in 2023 for acceptance of the exact same waste at issue from the exact same generator, FMS. *See Attachment F*. Despite concerning the exact same waste from the exact same generator, WVDEP's 2023 approval of Wetzel Landfill's minor permit modification for acceptance of special waste from FMS made no mention of any prohibition on the acceptance of such waste due to the presence of radiation. It can only be assumed that this is because such prohibitions do not exist.

WVDEP's actions in 2023 demonstrate that it is acutely aware of the requirements of West Virginia Code of State Rules § 33-1A-1 *et seq.* and that the acceptance and disposal of these special wastes have been permitted since the enactment of this rule in August of 2017. WVDEP's actions in 2024 are arbitrary and capricious and must be overturned by this Board as there is no basis in law for the denial of Wetzel Landfill's minor permit modifications for FMS and Rehydro.

**C. WVDEP's reliance on a West Virginia Public Health statute is both inappropriate and contrary to the Public Health statute and regulations.**

Neither the West Virginia Solid Waste Management Act, W. Va. Code § 22-15-1 *et seq.*, nor the Solid Waste Management Rules, W. Va. Code R. §§ 33-1-1 *et seq.* and 33-1A-1 *et seq.*, contain any provision prohibiting the disposal of radioactive waste material in West Virginia solid waste facilities, which are the only statutory and regulatory regimes under which WVDEP maintains jurisdiction for the enforcement of the disposal of solid waste in West Virginia.

As best as Appellants can tell, WVDEP has cherry-picked this language from the West Virginia Public Health statute, which states: "The disposal of radioactive waste material in a solid waste facility or in a commercial solid waste facility, as defined in section two, article fifteen, chapter twenty-two of this code, is prohibited. W. Va. Code § 16-27-2(b). A review of this statute reveals, however, that: (1) the section specifically exempts the disposal of industrial waste from its general prohibitions; (2) the statute falls under the jurisdiction of the West Virginia Department of Health and is enforceable only by the Director of Health, not WVDEP; and (3) the radioactive waste material described within this statute clearly does not include the radioactive waste at issue in this matter.

- 1) The West Virginia Public Health statute exempts the storage and disposal of waste materials produced within industrial activities from its general prohibition on the disposal of radioactive waste material in West Virginia solid waste facilities.**

While WVDEP has no jurisdiction to enforce the West Virginia Public Health statute, W. Va. Code § 16-1-1 *et seq.*, the section that WVDEP appears to be relying upon to deny Wetzel Landfill's minor permit modifications also directly exempts waste generated from industrial

activities from its general prohibition on the disposal of radioactive waste material. The statute states:

*(a) No person shall store or dispose of any radioactive waste material within the state; **Provided, That the provisions of this section do not prohibit (1) the storage and disposal of such material produced within the state as a result of medical, educational, research or industrial activities and so stored or disposed of in compliance with all applicable state and federal laws, or (2) the transportation of such material out of or through the state when done in compliance with all applicable state and federal laws; Provided, however, That such waste from industrial activities does not include, for the purpose of this article, such material produced from the operation of any nuclear power generation facility, nuclear processing facility, or nuclear reprocessing facility.***

W. Va. Code § 16-27-2(a) (emphasis added). Completion or production wastes and other oil and gas wastes that contain de minimis radiation are generated through an industrial process and are thus exempt from the statute's general prohibition on the disposal of radioactive waste material. WVDEP has ignored the whole of this statute to advance a position that is not only contrary to its own legislative rules, but that is directly exempt from the very statute it attempts to rely on.

**2) WVDEP has no jurisdiction to enforce the West Virginia Public Health statute.**

Even if the Public Health statute prohibited the disposal of oil and gas completion or production wastes from disposal within a West Virginia solid waste facility, which it does not, WVDEP has no authority to enforce this statute, especially when WVDEP's own rules directly permit such disposal. The West Virginia Public Health statute and accompanying regulations are to be administered by the West Virginia Department of Health<sup>4</sup> through its Director of Health. W. Va. Code § 16-1-1 *et seq.* The statute directly contemplates that enforcement of its provisions shall come through its Director of Health, which is an officer with the Department of Health:

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<sup>4</sup> Please note that this agency was previously the West Virginia Department of Health and Human Resources' Bureau for Public Health. West Virginia Code § 5F-2-1a(c)(1) provides for the termination of the Department of Health and Human Resources and the Bureau for Public Health is now under the umbrella agency, West Virginia Department of Health.

*The director of health shall initiate investigations into any use of radioactive material or disposal of radioactive waste material that might be in violation of the provisions of this article. The director of health shall also be empowered to file complaints for alleged violations of this article and shall assist local law-enforcement officers and prosecuting attorneys in the investigation and prosecution of all violations of this article.*

W. Va. Code § 16-27-3. WVDEP has no authority under West Virginia's Public Health statute, and, to Appellants' knowledge and belief, the Director of Health has conducted no investigations or filed any complaints regarding the disposal of oil and gas completion or production wastes in West Virginia solid waste facilities, despite the fact that the Director of Health's enforcement authority vested in 1980, and WVDEP's legislative rule, W. Va. Code R. § 33-1A-1 *et seq.*, was enacted in 2017. To the contrary, Wetzel Landfill maintains a Radiation Protection Plan approved by WVDEP with a copy of said approval to the Department of Health, demonstrating the Department's awareness and approval of Wetzel Landfill's acceptance of radioactive waste. *See Attachment G.* Further, the Department of Health conducts regular audits of FMS's facilities, wherein FMS makes the Department aware that the oil and gas completion or production waste remaining after its reuse/recycling process is disposed of at a West Virginia solid waste facility in accordance with that facility's applicable permits. Thus, the Department of Health is aware of WVDEP's solid waste rules, is aware of the disposal of wastes that contain radiation at solid waste facilities, and to Appellants' knowledge and belief has made no attempts to enforce against the disposal of oil and gas special wastes in solid waste facilities.

**3) Oil and gas completion or production wastes is not radioactive waste material as that term is defined in the West Virginia Public Health statute.**

While WVDEP is attempting to inappropriately rely upon the West Virginia Public Health statute to prop up its position that the disposal of radioactive waste material is prohibited in West Virginia solid waste facilities, WVDEP has overlooked the fact that the Public Health statute

provides a definition for “radioactive waste material” and does not simply encompass any material that may have trace amounts of radiation. The Public Health statute defines radioactive waste material as “any discarded radioactive material in the form of, or resulting from the use of, any byproduct material, source material or special nuclear material and includes low level waste.” W. Va. Code § 16-27-1(4). The waste at issue here is not a “radioactive waste material” as defined in the statute.

The radiation contained within the completion or production wastes that are at issue here can be classified as technologically enhanced naturally occurring radioactive material (hereinafter “TENORM”). TENORM is defined by the United States Environmental Protection Agency (hereinafter “EPA”) as “[n]aturally occurring radioactive materials that have been concentrated or exposed to the accessible environment as a result of human activities such as manufacturing, mineral extraction, or water processing.” See *Radiation Protection: Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)*.<sup>5</sup> Entities within the oil and natural gas industry routinely encounter geologic formations that contain these naturally occurring radionuclides. See *TENORM: Oil and Gas Production Wastes*.<sup>6</sup> Examples of wastes generated by the oil and gas industry that contain TENORM include:

- Mineral scales inside pipes;
- Sludges/sediments;
- Contaminated equipment or components;
- Produced waters;
- Completion fluids;
- Drill cuttings; and
- Associated drilling wastes.

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<sup>5</sup> <https://www.epa.gov/radiation/technologically-enhanced-naturally-occurring-radioactive-materials-tenorm> (last visited March 17, 2024).

<sup>6</sup> <https://www.epa.gov/radiation/tenorm-oil-and-gas-production-wastes> (last visited March 17, 2024).

*Id.* The TENORM waste at issue here is not a radioactive waste material as defined under the Public Health statute, as it is not a “discarded radioactive material in the form of, or resulting from the use of, any byproduct material, source material, or special nuclear material.” Neither is such waste “low-level waste.” Low-level waste is defined as radioactive waste that:

*(A) is neither high-level waste or transuranic, nor spent nuclear fuel, nor by-product material as defined in section 11(e)(2) of the Atomic Energy Act of 1954, as amended; and*

*(B) Is any radioactive material that the United States nuclear regulatory commission classified as low-level radioactive waste on or after the first day of January, [1989]; Provided, That any material classified as low-level radioactive waste on or after the first day of January, [1989], shall be considered low-level radioactive waste without regard to a nuclear regulatory commission determination that such material is below regulatory concern; and*

*(C) Is any radioactive material produced after the first day of January, [1989], which would have been classified as a low-level radioactive waste, utilizing the standards in effect on that date, without regard to a determination by an agency of the United States government that such material is below regulatory concern.*

W. Va. Code § 16-27-1(3). Waste contaminated with TENORM is not a low-level radioactive waste as included within the Public Health statute’s definition of radioactive waste material.

Under the Atomic Energy Act, the Nuclear Regulatory Commission (hereinafter “NRC”) is assigned the health, safety, and licensing responsibility specifically for uranium and thorium. Included within NRC’s authority, as identified in the statutory definition of radioactive waste material, is the regulation of low-level waste. The NRC has identified low-level waste to include those items that have become contaminated with radioactive material or have become radioactive through exposure to neutron radiation. *See Nuclear Regulatory Commission: Low Level Waste.*<sup>7</sup> This waste typically includes: contaminated protective shoe covers and clothing, wiping rags, mops, filters, reactor water treatment residues, equipment and tools, luminous dials, medical tubes,

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<sup>7</sup> <https://www.nrc.gov/waste/low-level-waste.html> (last updated March 12, 2020).



swabs, injection needles, syringes, and laboratory animal carcasses and tissues. *Id.* In policy issued by the NRC in 2003, the NRC has stated that its best approach for regulating low-level waste is to limit its authority to uranium and thorium that have been extracted or purposely concentrated for the use of the uranium or thorium. *See Policy Issue Notation Vote: Interagency Jurisdictional Working Group Evaluating the Regulation of Low-Level Source Material or Materials Containing Less than 0.05 percent by Weight Concentration Uranium and/or Thorium.*<sup>8</sup> All other uranium and thorium incidental to the processing of other materials would be considered TENORM/NORM and would be left for regulation under existing standards. *Id.* Therefore, NRC’s position is that it does not have the authority to regulate waste material contaminated with TENORM, as TENORM is not a low-level waste under NRC’s jurisdiction.

This determination by the NRC that TENORM is not a low-level waste is supported by documentation released by EPA, which classifies TENORM as a “low-activity” waste, which is a waste that is considered small enough that the radiation protection measures typically necessary to manage higher-activity radioactive material may not be required. *See EPA Radiation Protection: Low-Activity Radioactive Wastes.*<sup>9</sup>

Therefore, while the special wastes at issue may be contaminated with TENORM, this TENORM waste does not constitute “radioactive waste material” as that term is defined in the Public Health statute.

#### **D. WVDEP’s denials constitute an unlawful rulemaking.**

As noted above, neither the Solid Waste Management Act nor its applicable rules prohibit the disposal of oil and gas completion or production wastes in West Virginia solid waste facilities, and WVDEP’s position directly contradicts established law permitting such disposal. As such,

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<sup>8</sup> <https://www.nrc.gov/docs/ML0309/ML030920536.pdf> (May 1, 2003).

<sup>9</sup> <https://www.epa.gov/radiation/low-activity-radioactive-wastes> (last updated Feb. 5, 2024).

WVDEP's minor permit modification denials constitute an improper rulemaking, as WVDEP has failed to follow the statutory process for the creation of legislative rules in West Virginia. The West Virginia Code requires WVDEP to obtain approval from the West Virginia Legislature prior to enactment or amendment of any rule:

*(a) The director shall promulgate rules in compliance with the West Virginia administrative procedures act to carry out the provisions of this article including modifying any existing rules and establishing permit application fees up to an amount sufficient to defray the costs of permit review. In promulgating rules the director shall consider and establish requirements based on the quantity of solid waste to be handled, including different requirements for solid waste facilities or approved solid waste facilities which handle more than one hundred tons of solid waste per day, the environmental impact of solid waste disposal, the nature, source or characteristics of the solid waste, potential for contamination of ground, surface and potable waters, requirements for public roadway standards and design for access to the facilities with approval by the commissioner of the Division of Highways, the financial capability of the applicant, soil and geological considerations, environmental and other natural resource considerations.*

W. Va. Code § 22-15-5(a). As such, to enact or amend an existing legislative rule such as W. Va. Code R. §§ 33-1-1 *et seq.* and 33-1A-1 *et seq.*, WVDEP must:

- Hold one or more public hearings on the proposed rule or amendment to rule. W. Va Code § 29A-3-5;
- Accept written statements or documents from interested parties. W. Va. Code § 29A-3-5;
- Submit the proposed rule or amendments to the West Virginia Legislature. W. Va. Code § 29A-3-9; and
- Await approval and enactment of the rule or amendments to an existing rule by the West Virginia Legislature. W. Va. Code § 29A-3-9.

WVDEP took none of these actions in this instance and instead has unilaterally implemented a rule that has and will have a significant impact on the regulated community. WVDEP's actions are made even more egregious by the fact that this was a minor modification renewal that was not subject to any public comment period, which means that WVDEP has altered the regulatory landscape of this State without having to face any scrutiny for its actions.

WVDEP's actions are in direct contradiction to established law and constitute an unlawful rulemaking. This Board must rescind the FMS Renewal denial and the Rehydro denial and order that Wetzel Landfill be granted the minor permit modifications to accept oil and gas completion or production wastes from these generators.

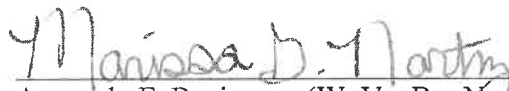
**III. Relief Requested**

**WHEREFORE**, for the reasons set forth more fully above, Wetzel Landfill and FMS respectfully request that this Board RESCIND WVDEP's FMS Renewal denial and the Rehydro denial and ORDER WVDEP to issue the minor permit modifications to Wetzel Landfill for the acceptance and disposal of the special wastes generated by FMS and Rehydro.

**Respectfully submitted,**

**Lackawanna Transport Company, d/b/a  
Wetzel County Landfill, and Fluid  
Management Solutions, Inc.**

**By counsel:**



Armando F. Benincasa (W. Va. Bar No. 6865)

Marissa G. Nortz (W. Va. Bar No. 12742)

Allyn G. Turner (W. Va. Bar No. 5561)

STEPTOE & JOHNSON PLLC

707 Virginia Street, East

Charleston, West Virginia 25326

Telephone: (304) 353-8000

Facsimile: (304) 353-8180

*Counsel for Appellants, Lackawanna Transport  
Company, d/b/a Wetzel County Landfill, and Fluid  
Management Solutions, Inc.*

WEST VIRGINIA ENVIRONMENTAL QUALITY BOARD  
CHARLESTON, WEST VIRGINIA

LACKAWANNA TRANSPORT COMPANY,  
d/b/a WETZEL COUNTY LANDFILL and  
FLUID MANAGEMENT SOLUTIONS, INC.

Appellants,

v.

Appeal No.: 24-04-EQB

DIRECTOR, DIVISION OF WATER  
AND WASTE MANAGEMENT  
WEST VIRGINIA DEPARTMENT  
OF ENVIRONMENTAL PROTECTION

Appellee.

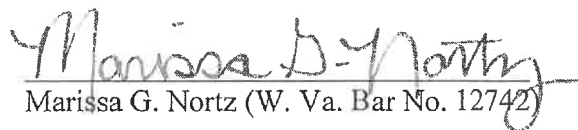
CERTIFICATE OF SERVICE

I, Marissa G. Nortz, counsel for Appellants, do hereby certify that I have filed the foregoing "Notice of Appeal" with the West Virginia Environmental Quality Board and have served true and exact copies of the same upon all counsel of record via electronic, hand delivery, and U.S. Mail, postage prepaid, on this 20<sup>th</sup> day of March, 2024.

Kenna M. DeRaimo, Clerk  
West Virginia Environmental Quality Board  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304

Office of Legal Services  
WV Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

Jeremy Bandy, Director  
Division of Water and Waste Management  
West Virginia Department of Environmental Protection  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304

  
Marissa G. Nortz (W. Va. Bar No. 12742)

# **ATTACHMENT B**



# West Virginia DEP Waste Characterization Form

[For DEP use. SWPU ID: \_\_\_\_\_]

**Generator:** Complete Parts A through G. Do not leave any blanks. Enter N/A for every item that is "not applicable." Submit with supporting documents to the landfill that will accept the waste. Please do not include a cover letter except to explain something not covered by the Waste Characterization Form. IDs are for the Generator's convenience and are optional. E-mail addresses are preferred but optional.

**A. Responsible Parties** Landfill's ID: 1021

Generator: Fluid Management Solutions, Inc. Generator's ID: WVR000549360

Contact Person: Carri Tucker or Dave Clark Telephone: 304-433-4422 or 724-350-2548

Address: 5445 National Road,

City, State, Zip: Triadelphia, WV 26059 E-mail: dclark@fluidmgmtsol.com or carri@tuckercoleman.com

Transporter: Fluid Management Solutions, Inc. Transporter's ID: WVR000549360

Contact Person: Carri Tucker or Dave Clark Telephone: 304-433-4422 or 724-350-2548

Address: 5445 National Road,

City, State, Zip: Triadelphia, WV 26059 E-mail: dclark@fluidmgmtsol.com

Contractor: N/A Contractor's ID: N/A

Contact Person: N/A Telephone: N/A

Address: N/A

City, State, Zip: N/A E-mail: N/A

Laboratory: Pace Analytical Services, LLC Laboratory ID: West Virginia DEP Certi #: 143

Contact Person: Skyler Richmond Telephone: (724)850-5600

Address: 1638 Roseytown Road - Suites 2,3,4 - (724)850-5600

City, State, Zip: Greensburg, PA 15601 E-mail: alexis.ozoroski@pacelabs.com

## B. Waste Description

Type of special waste according to 33 CSR § 1-4.13 (Circle all that apply; if none apply, make no response):

- |                             |                  |               |                           |                           |
|-----------------------------|------------------|---------------|---------------------------|---------------------------|
| Petroleum-contaminated soil | Asbestos Wastes  | Liquids       | Tires                     | Drums                     |
| Bulky Goods                 | Infectious Waste | Sewage Sludge | Automobile Shredder Fluff | Municipal Incinerator Ash |

Anticipated total weight as delivered to landfill (tons): 20,000 Over what length of time? 2 years

Detailed description of the process that generated this waste: The waste is generated from oil and gas production, i.e., drilling flowback. Solids produced from the processing of oil & gas related waste water including drilling and fracking fluids. Solids are mechanically separated during processing. The liquids are recovered and reused. Solids are sent to an approved landfill for disposal.

## C. Hazardous Potential

All questions in Section C apply to all wastes. Answer "Yes" or "No." Leave no blanks and do not enter N/A.

According to 40 C.F.R. is this: A characteristic hazardous waste: no A listed hazardous waste: no

An exempt or excluded HW: yes Prohibited by Land Disposal Restrictions of 40 C.F.R. § 268: no  
 Does this waste contain: PCBs: no Dioxins: no Radioactive material: yes \*

\* If "NO", waste material must be less than 10µR/hr above background(drill cuttings and associated waste and completion and production waste only)

**D. General Characteristics**

List the constituents of this waste present at more than about 1% by weight. Use generic names, not trade names. Weight percents may be by generator knowledge, lab tests, or MSDS.

Constituent	Wt. %	Constituent	Wt. %	Constituent	Wt. %
Processed solids	100				

List the constituents present at less than about 1% by weight: \_\_\_\_\_

Consistency at 70°F and 1 atmosphere (circle): solid paste slush slurry liquid gas  
 Percent solids by weight: 95-100% Determined visually? Yes Or by test (specify): paint filter  
 Color (shade & hue): brown, dark brown, dark gray Odor (intensity & type): no

**E. Petroleum Contaminated Soil:**

Maximum mg/kg: GRO 4050 TPH DRO127000 ORO ND BTEX ND Benzene ND

**F. Miscellaneous:** Have you attached a photograph, sketch, or map of the site at the time of sampling with sample locations marked? yes

Place where the waste was generated (city, intersection, mile marker, etc.): 5445 National Road, Triadelphia

Additional comments: \_\_\_\_\_

**G. Documents Enclosed** (check all that apply)

MSDS  Chain of Custody  Lab Certification of Results  Lab Report  Photo

Analytical Summary: \_\_\_\_\_ Report \_\_\_\_\_ Map \_\_\_\_\_ Other (specify) \_\_\_\_\_

**H. Generator Certification**

I am legally authorized to represent the Generator. All information presented in this characterization is the result of (1) my knowledge of this waste or (2) laboratory analysis of a representative sample or samples by an EPA method or methods.

I hereby certify that the information supplied on this form and attached to it is complete and accurate, that no negligent or willful omissions of waste characteristics have been made, and that all known or suspected hazards have been disclosed.

Generator's authorized representative: Employer: Fluid Management Solutions, Inc. Title: Sr. EHS Specialist

Signature: *Carri Tucker* Printed name: Carri Tucker Date: 01/02/2024

**I: Application for Minor Permit Modification.** To be completed by the landfill.

Wetzel County Landfill hereby applies for a minor permit modification to dispose of the special waste characterized by this Waste Characterization Form and attached documents.

**Tons Once:** \_\_\_\_\_ **Disposed of by (date):** \_\_\_\_\_ **or Tons per Year** for two years: 20000

Check to request use as daily cover: \_\_\_\_\_ **Notes:** \_\_\_\_\_

**Notes:** \_\_\_\_\_

\_\_\_\_\_  
Signature: TGGadd

\_\_\_\_\_  
Title: Environmental Compliance Manager

\_\_\_\_\_  
Date: 2/15/2024





**Analytical Guidelines for Special Waste**  
 Laws, Rules, Policies, or Other Guidelines May Take Precedence

Waste	Analyses								
<u>All wastes</u> , number of samples	<table border="1" data-bbox="633 325 1218 556"> <thead> <tr> <th>Amount</th> <th>Analyze one sample per:</th> </tr> </thead> <tbody> <tr> <td>First 3,000 tons</td> <td>300 tons</td> </tr> <tr> <td>Next 6,000 tons</td> <td>600 tons</td> </tr> <tr> <td>Each Additional 1,000 tons</td> <td>1,000 tons</td> </tr> </tbody> </table> <p>Samples must be composite samples. If these results are so variable that they suggest portions of the waste may be hazardous or otherwise unsuitable for MSW disposal, additional analyses will be required or the request will be denied. For very uniform wastes, fewer samples may be accepted if agreed to before sampling.</p>	Amount	Analyze one sample per:	First 3,000 tons	300 tons	Next 6,000 tons	600 tons	Each Additional 1,000 tons	1,000 tons
Amount	Analyze one sample per:								
First 3,000 tons	300 tons								
Next 6,000 tons	600 tons								
Each Additional 1,000 tons	1,000 tons								
<u>All wastes</u> , what to analyze for	Analyze for all regulated contaminants and properties that reasonably may be expected to be present. The burden is upon the <u>generator</u> to prove that the waste is nonhazardous and that it conforms to WVDEP policies and guidelines.								
<u>Specific wastes:</u> In addition to the above, analyze the following specific wastes for:									
Waste contaminated by metallic mercury or mercury compounds	Total mercury TCLP mercury								
Metal-contaminated waste	TCLP for metals on the TCLP list								
Oil and gas exploration and production sludge, mud, solids, etc.	Percent solids by evaporation, EPA method 160.3 or 2540 Plus, the analyses for metal-contaminated wastes Plus, the analyses for petroleum contaminated soils								
Oil-water separator sludge or solids, dried or moist	Percent solids by evaporation, EPA method 160.3 or 2540 Plus, the analyses for petroleum contaminated soils								
Petroleum-contaminated soil	TPH: ORO, DRO, and/or GRO as indicated by the expected contaminants Semi-Volatiles if DRO is > 100 mg/kg; alternatively, skip the total semi-volatiles analysis and do TCLP semi-volatiles Total concentration of TCLP Semi-Volatiles. If any compound is present at greater than 20 times its TCLP limit, perform TCLP for that compound Total lead if the petroleum may have contained lead; alternatively, skip the total lead analysis and do TCLP lead TCLP lead if total lead is > 100 mg/kg								
Sludge, filter-pressed sludge or dried sludge	Percent solids by evaporation, EPA method 160.3 or 2540								
Solidified sludge	Solidified by generator: Percent solids by EPA method 160.3 or 2540 Solidified by landfill: Paint filter								

# ATTACHMENT C



west virginia department of environmental protection

Division of Water and Waste Management  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: (304) 926-0465  
Fax: (304) 926-0456

Harold D. Ward, Cabinet Secretary  
dep.wv.gov

## Denial of Request to Accept and Dispose of Special Waste

SWPU ID: 24-02-21 Landfill: Wetzel County Generator: Fluid Management Solutions  
Waste: Drilling Flow back , Fracking Fluids,

The application for a minor permit modification to accept this waste is **DENIED** for the reason(s) indicated below. This/these problem(s) must be resolved satisfactorily and a new application submitted before a permit modification will be issued for this waste.


1.  **Illegible:** Significant information on one or more documents was not easily legible.
2.  **Form:** Use of the Waste Characterization Form instead of the Solid Waste Profile is required for submissions received after March 31, 2004. \_\_\_\_\_
3.  **Comments:** The disposal of radioactive waste material in a solid waste facility or in a commercial solid waste facility, as defined in section two, article fifteen, chapter twenty-two of this code, is prohibited.
  - A.  **Responsible Parties:** \_\_\_\_\_
  - B.  **Waste Description:** \_\_\_\_\_
  - C.  **Hazardous Potential:** \_\_\_\_\_
  - D.  **General Characteristics:** \_\_\_\_\_
  - F.  **Miscellaneous:** \_\_\_\_\_
  - G.  **Documents Enclosed:** \_\_\_\_\_
  - H.  **Generator Certification** was not completed, or was completed improperly. \_\_\_\_\_
  - I:  **Minor Permit Modification Application** was not completed, or was completed improperly.

Promoting a healthy environment.

If you have questions or need additional information, please contact Bassam Makar at (304) 926-0499, extension 43851 or Bassam.Y.Makar@wv.gov

Additional comments:

**Minor Permit Modification Is DENIED:**

  
\_\_\_\_\_  
Yogesh Patel, P.E.  
Assistant Director

February 20, 2024  
Date

# ATTACHMENT D



# West Virginia DEP Waste Characterization Form

[For DEP use. SWPU ID:  
]

Generator: Complete Parts A through G. Do not leave any blanks. Enter N/A for every item that is "not applicable." Submit with supporting documents to the landfill that will accept the waste. Please do not include a cover letter except to explain something not covered by the Waste Characterization Form. IDs are for the Generator's convenience and are optional. E-mail addresses are preferred but optional.

### A. Responsible Parties

Generator: **ReHydro LTD**  
Contact Person: **CATTI MASON**  
Address: **8741 ST Rt 250 SE**  
City, State, Zip: **DENNISON, OH 44621**

Landfill's ID: 1021  
Generator's ID: N/A  
Telephone: 330.763.0362  
E-mail: **rehydrowater@gmail.com**  
Transporter's ID:

Transporter: **Cowboy Industries**  
Contact Person: **Margaret Williams**  
Address: **7716 Depot Rd unit L**  
City, State, Zip: **Lisbon, OH 44632**

Telephone: **330-787-3641**  
E-mail: **rehdrowater@gamil.com**

Contractor: N/A  
Contact Person: N/A  
Address: N/A  
City, State, Zip: N/A

Contractor's ID: N/A  
Telephone: N/A  
E-mail: N/A

Laboratory: **Shale Testing Solutions**  
Contact Person:  
Address: **77505 Cadiz-New Athens Rd**  
City, State, Zip: **Cadiz, OH 43907**

Laboratory ID: 394  
Telephone: 800-446-0971  
E-mail; Fax: 330-222-1500

### B. Waste Description

Type of special waste according to 33 CSR § 1-4.13 (Circle all that apply; if none apply, make no response):

Petroleum Contaminated Soil	Asbestos Wastes	Liquids	Tires	Drums
Bulky Goods	Infectious Waste	Sewage Sludge	Automobile Shredder Fluff	Municipal Incinerator Ash

Anticipated total weight as delivered to landfill (tons): 5000 Over what length of time? **2 years**  
Detailed description of the process that generated this waste: **Productions and Completions Waste**

### C. Hazardous Potential

All questions in Section C apply to all wastes. Answer "Yes" or "No." Leave no blanks and do not enter N/A.  
According to 40 C.F.R. is this: A characteristic hazardous waste: **NO** A listed hazardous waste: **NO**  
An exempt or excluded HW: **NO** Prohibited by Land Disposal Restrictions of 40 C.F.R. § 268:  
Does this waste contain: PCBs: **NO** Dioxins: **NO** Radioactive material: **Yes**

\* If "NO", waste material must be less than 10µR/hr above background (drill cuttings and associated waste and completion and production waste only)

**D. General Characteristics**

List the constituents of this waste present at more than about 1% by weight. Use generic names, not trade names. Weight percents may be by generator knowledge, lab tests, or MSDS.

Constituent	Wt. %	Constituent	Wt. %	Constituent	Wt. %
Barium	10-20%				
Iron	10%				
Calcium	20%				

List the constituents present at less than about 1% by weight:

Consistency at 70°F and 1 atmosphere (circle): solid paste slush slurry liquid gas

Percent solids by weight: 60-80% Determined visually? Test Or by test (specify): Passed Paint

Color (shade & hue): Light + Dark Brown Odor (intensity & type): Salty Filter Test

E. Petroleum Contaminated Soil: N/A

Maximum mg/kg: GRO DRO ORO BTEX Benzene

F. Miscellaneous: Have you attached a photograph, sketch, or map of the site at the time of sampling with sample locations marked?

Place where the waste was generated (city, intersection, mile marker, etc.): Dennison, OH

Additional comments:

**G. Documents Enclosed** (check all that apply)

MSDS Chain of Custody  Lab Certification of Results  Lab Report  Photo  
 Analytical Summary: Report Map Other (specify)

**H. Generator Certification**

I am legally authorized to represent the Generator. All information presented in this characterization is the result of (1) my knowledge of this waste or (2) laboratory analysis of a representative sample or samples by an EPA method or methods.

I hereby certify that the information supplied on this form and attached to it is complete and accurate, that no negligent or willful omissions of waste characteristics have been made, and that all known or suspected hazards have been disclosed.

Generator's authorized representative: Employer: ReHydro LTD Title: Manager  
 Signature: [Signature] Printed name: CARRI A MASON Date: 1/9/2024

**I: Application for Minor Permit Modification.** To be completed by the landfill.  
 Wetzel County Landfill hereby applies for a minor permit modification to dispose of the special waste characterized by this Waste Characterization Form and attached documents.  
**Tons Once:** Disposed of by (date): **or Tons per Year** for two years: 5000  
 Check to request use as daily cover: Notes:  
 Notes:

Signature: TGGadd

Title: Env. Compliance Manager

Date: 1/29/24



Waste	Analyses								
<p><u>All wastes</u>, number of samples</p>	<table border="1" data-bbox="673 367 1234 583"> <thead> <tr> <th>Amount</th> <th>Analyze one sample per:</th> </tr> </thead> <tbody> <tr> <td>First 3,000 tons</td> <td>300 tons</td> </tr> <tr> <td>Next 6,000 tons</td> <td>600 tons</td> </tr> <tr> <td>Each Additional 1,000 tons</td> <td>1,000 tons</td> </tr> </tbody> </table> <p>Samples must be composite samples. If these results are so variable that they suggest portions of the waste may be hazardous or otherwise unsuitable for MSW disposal, additional analyses will be required or the request will be denied. For very uniform wastes, fewer samples may be accepted if agreed to before sampling.</p>	Amount	Analyze one sample per:	First 3,000 tons	300 tons	Next 6,000 tons	600 tons	Each Additional 1,000 tons	1,000 tons
Amount	Analyze one sample per:								
First 3,000 tons	300 tons								
Next 6,000 tons	600 tons								
Each Additional 1,000 tons	1,000 tons								
<p><u>All wastes</u>, what to analyze for</p>	<p>Analyze for all regulated contaminants and properties that reasonably may be expected to be present. The burden is upon the <u>generator</u> to prove that the waste is nonhazardous and that it conforms to WVDEP policies and guidelines.</p>								
<p><u>Specific wastes:</u> In addition to the above, analyze the following specific wastes for:</p>									
<p>Waste contaminated by metallic mercury or mercury compounds</p>	<p>Total mercury TCLP mercury</p>								
<p>Metal-contaminated waste</p>	<p>TCLP for metals on the TCLP list</p>								
<p>Oil and gas exploration and production sludge, mud, solids, etc.</p>	<p>Percent solids by evaporation, EPA method 160.3 or 2540 Plus, the analyses for metal-contaminated wastes Plus, the analyses for petroleum contaminated soils</p>								
<p>Oil-water separator sludge or solids, dried or moist</p>	<p>Percent solids by evaporation, EPA method 160.3 or 2540 Plus, the analyses for petroleum contaminated soils</p>								
<p>Petroleum-contaminated soil</p>	<p>TPH: ORO, DRO, and/or GRO as indicated by the expected contaminants Semi-Volatiles if DRO is &gt; 100 mg/kg; alternatively, skip the total semi-volatiles analysis and do TCLP semi-volatiles Total concentration of TCLP Semi-Volatiles. If any compound is present at greater than 20 times its TCLP limit, perform TCLP for that compound Total lead if the petroleum may have contained lead; alternatively, skip the total lead analysis and do TCLP lead TCLP lead if total lead is &gt; 100 mg/kg</p>								
<p>Sludge, filter-pressed sludge or dried sludge</p>	<p>Percent solids by evaporation, EPA method 160.3 or 2540</p>								
<p>Solidified sludge</p>	<p>Solidified by generator: Percent solids by EPA method 160.3 or 2540 Solidified by landfill: Paint filter</p>								

# **ATTACHMENT E**



west virginia department of environmental protection

Division of Water and Waste Management  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: (304) 926-0465  
Fax: (304) 926-0456

Harold D. Ward, Cabinet Secretary  
dep.wv.gov

### Denial of Request to Accept and Dispose of Special Waste

SWPU ID: 24-01-30 Landfill: Wetzel County Generator: Rehydro LTD  
Waste: Production & Completion Waste

The application for a minor permit modification to accept this waste is **DENIED** for the reason(s) indicated below. This/these problem(s) must be resolved satisfactorily and a new application submitted before a permit modification will be issued for this waste.

1.  **Illegible:** Significant information on one or more documents was not easily legible.
2.  **Form:** Use of the Waste Characterization Form instead of the Solid Waste Profile is required for submissions received after March 31, 2004. \_\_\_\_\_
3.  **Comments:** The disposal of radioactive waste material in a solid waste facility or in a commercial solid waste facility, as defined in section two, article fifteen, chapter twenty-two of this code, is prohibited.
  - A.  **Responsible Parties:** \_\_\_\_\_
  - B.  **Waste Description:** \_\_\_\_\_
  - C.  **Hazardous Potential:** \_\_\_\_\_
  - D.  **General Characteristics:** \_\_\_\_\_
  - F.  **Miscellaneous:** \_\_\_\_\_
  - G.  **Documents Enclosed:** \_\_\_\_\_
  - H.  **Generator Certification** was not completed, or was completed improperly. \_\_\_\_\_
  - I.  **Minor Permit Modification Application** was not completed, or was completed improperly.

Promoting a healthy environment.

- If you have questions or need additional information, please contact Bassam Makar at (304) 926-0499, extension 43851 or Bassam.Y.Makar@wv.gov
- Additional comments:

**Minor Permit Modification Is DENIED:**



---

Yogesh Patel, P.E.  
Assistant Director

February 20, 2024

Date

# ATTACHMENT F



west virginia department of environmental protection

Division of Water and Waste Management  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: (304) 926-0465  
Fax: (304) 926-0456

Harold D. Ward, Cabinet Secretary  
dep.wv.gov

**Minor Permit Modification for  
Disposal of Oil & Gas Related Waste Streams**

SWPU ID: 23-02-33

Landfill: Wetzel

Generator: Fluid Management Solutions, Inc

Request Received: February 22, 2023

Request Dated: February 22, 2023

Waste: Processed solids & drilling fluid waste

Generated at: Triadelphia, WV

**Comments and/or Conditions**

The following checked (X) comments and/or conditions apply:

1.  The West Virginia Department of Environmental Protection, Office of Solid Waste, has reviewed the information submitted by Wetzel Landfill. Based upon this information, the WVDEP believes that this waste is exempt from regulation as hazardous waste under the Resource Conservation and Recovery Act. Consequently, a minor permit modification is granted for the disposal of this waste at Wetzel Landfill.
2.  Quantity Approved: 20,000 Tons  
 This quantity approved is an increase of the amount allowed by the Minor Permit Modification: granted:
3.  This amount may be received before: February 22, 2024  
 The above date represents an extension of the time allow by the Minor Permit Modification: granted:
4.  Approved for disposal:  
 TPH (GRO + DRO + ORO) > 10,000 mg.kg: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that TPH (

Promoting a healthy environment.

GRO + DRO + ORO) is less than 10,000 mg/kg, TOVs are less than 100 ppm, and if DRO is present at more than 100 mg/kg, until total PAH is less than 100 mg/kg, and then disposed of within 30 days of obtaining those test results.

TPH (.....) < 10,000 mg/kg:

- a. DRO > 100 mg/kg and/or TOVs > 100 ppm: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that, as applicable, total PAH is less than 100 mg/kg and TOVs are less than 100 ppm, and then disposed of within 30 days of obtaining those test results.
- b. DRO < 100 mg/kg and TOVs < 100 ppm: This waste must be disposed of within 30 days of receiving the waste or this minor permit modification, whichever is later.

5.  Approved for use as daily cover or disposal:

TPH (.....) > 5,000 mg/kg: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that TPH (.....) is less than 5,000 mg/kg, TOVs are less than 100 ppm, and if DRO is present at more than 100 mg/kg, until total PAH is less than 100 mg/kg, and then used as daily cover or disposed of within 30 days of obtaining those test results.

TPH (.....) < 5,000 mg/kg:

- a. DRO > 100 mg/kg and/or TOVs > 100 ppm: This waste must be aerated over an unused lined portion of the landfill until test results are obtained showing that, as applicable, total PAH is less than 100 mg/kg and TOVs are less than 100 ppm, and then disposed of within 30 days of obtaining those test results.
- b. DRO < 100 mg/kg and TOVs < 100 ppm: This waste must be used as daily cover or disposed of within 30 days of receiving the waste or this minor permit modification, whichever is later.

6.  After a minimum of thirty days of aeration, this waste must be tested for \_\_\_\_\_ and the analytical results submitted to this office for review before disposal.

7.  Petroleum contaminated materials that are not used as daily cover shall be included in monthly tonnage calculations.

8.  Petroleum contaminated materials (PCM) that are used as daily cover may be excluded from monthly tonnage calculations, provided that all of the following conditions are met:

- a. Daily deposition of solid waste is confined to as small an area as practical in accordance with the Solid Waste Management Rule, 33 C.S.R. 1-4.6.a.1.A.

- b. Calculations for the amount to be used as daily cover and exempted from the tonnage limits shall be based on an eight foot (8') vertical cell height for solid waste disposed of daily.
- c. Under no circumstances, shall the amount of PCM used as daily cover and exempted from monthly tonnage calculations, exceed the rate of 0.14 tons per one (1) ton of solid waste.
- d. Example: A facility that receives 200 tons per day of solid waste, including PCM that is suitable for use as daily cover, shall not exceed 28 tons per day for tonnage exemption.

Required formula for calculation:

$$0.14 \times \text{tons of solid waste per day} = \text{tons of cover material permitted per day.}$$


- 9.  The disposal or use as daily cover of this waste must take place during normal working hours, will not be exempt from assessment fees, and must be included in the monthly tonnage report.
- 10.  The Waste Characterization Form supplied by the generator states that the waste being disposed under this special waste permit is less than 10 $\mu$ R/hr above background levels. The waste must pass through the landfill's fixed radiation monitors, and if the fixed radiation monitors detect radiation in this waste stream equal to or greater than 10 $\mu$ R/hr above background, the landfill must reject the waste and submit a Form 1W to the WVDEP and WVDHHR as per the Solid Waste Management Rule, 33CSR1; Section 5.6.d.5.
- 11.  Free liquids received by the landfill cannot be disposed of in the landfill. Free liquids and poorly contained liquids must be absorbed on solid material before being placed in the disposal cell. A Paint Filter Liquid Test (Method 9095) as described in "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods: (EPA Pub. No. SW-846), must be performed on each load of waste after solidification and results maintained on site at all times with the special waste permit for review by West Virginia Department of Environmental Protection (DEP\_ personnel. A summary of this data must be submitted to the DEP every six (6) months from the issuance date of this permit, for the life of the permit.
- 12.  Additional comments and/or conditions: Each load of Completion and Production waste must be accompanied by test results for the combined concentration of Radium 226 and Radium 228 for the particular load of waste. If the combined concentration in the waste is less than or equal to fifty picocuries per gram (50pCi/gr.), the facility may accept the waste for disposal. If the values are greater than 50 pCi/gr, the facility shall reject the load.
- 13.  The landfill must maintain monthly storage capacity to accommodate the disposal of municipal solid waste as per the facility's Certificate of Necessity. This Permit in no way allows the landfill to guarantee space or accept waste from the waste generator if the



guarantee or acceptance of the waste will be likely to create an excess in monthly tonnage.

14.  If you have questions or need additional information, please contact Bassam Makar at (304) 926-0499, extension 43851 or Bassam.Y.Makar@wv.gov

**Minor Permit Modification is Granted:**

  
\_\_\_\_\_  
Yogesh Patel, P.E.  
Assistant Director

February 22, 2023  
Date



West Virginia DEP Waste Characterization Form

[For DEP use. SWPU ID: \_\_\_\_\_]

Generator: Complete Parts A through G. Do not leave any blanks. Enter N/A for every item that is "not applicable." Submit with supporting documents to the landfill that will accept the waste. Please do not include a cover letter except to explain something not covered by the Waste Characterization Form. IDs are for the Generator's convenience and are optional. E-mail addresses are preferred but optional.

A. Responsible Parties

Landfill's ID: 1021

Generator: Fluid Management Solutions, Inc. Generator's ID: WVR000549360

Contact Person: Carri Tucker or Dave Clark Telephone: 304-433-4422 or 724-350-2548

Address: 5445 National Road,

City, State, Zip: Triadelphia, WV 26059 E-mail: dclark@fluidmgmtsol.com or carri@obrienssafetysservices.com

Transporter: Fluid Management Solutions, Inc. Transporter's ID: WVR000549360

Contact Person: Carri Tucker or Dave Clark Telephone: 304-433-4422 or 724-350-2548

Address: 5445 National Road,

City, State, Zip: Triadelphia, WV 26059 E-mail: dclark@fluidmgmtsol.com

Contractor:n/a Contractor's ID:n/a

Contact Person:n/a Telephone:n/a

Address:n/a

City, State, Zip:n/a E-mail: n/a

Laboratory: Pace Analytical Services, LLC Laboratory ID: West Virginia DEP Certi #: 143

Contact Person: Skyler Richmond Telephone: 304-250-6209

Address: 1638 Roseytown Road - Suites 2,3,4 - (724)850-5600

City, State, Zip: Greensburg, PA 15601 E-mail: Skyler.richmond@pacelabs.com

B. Waste Description

Type of special waste according to 33 CSR § 1-4.13 (Circle all that apply; if none apply, make no response):

- Petroleum-contaminated soil, Asbestos Wastes, Liquids, Tires, Drums, Bulky Goods, Infectious Waste, Sewage Sludge, Automobile Shredder Fluff, Municipal Incinerator Ash

Anticipated total weight as delivered to landfill (tons): 20,000 Over what length of time? 2 years

Detailed description of the process that generated this waste: The waste is generated from oil and gas production, i.e., drilling flowback. Solids produced from the processing of oil & gas related waste water including drilling and fracking fluids. Solids are mechanically separated during processing. The liquids are recovered and reused. Solids are sent to an approved landfill for disposal.

C. Hazardous Potential

All questions in Section C apply to all wastes. Answer "Yes" or "No." Leave no blanks and do not enter N/A.

According to 40 C.F.R. is this: A characteristic hazardous waste: no A listed hazardous waste: no

An exempt or excluded HW: no \_\_\_ Prohibited by Land Disposal Restrictions of 40 C.F.R. § 268: no \_\_\_  
Does this waste contain: PCBs: no \_\_\_ Dioxins: no \_\_\_ Radioactive material: yes \_\_\_ \*

\* If "NO", waste material must be less than 10µR/hr above background(drill cuttings and associated waste and completion and production waste only)

**D. General Characteristics**

List the constituents of this waste present at more than about 1% by weight. Use generic names, not trade names. Weight percents may be by generator knowledge, lab tests, or MSDS.

Constituent	Wt. %	Constituent	Wt. %	Constituent	Wt. %
Processed solids	100				
Drilling fluid waste	100				

List the constituents present at less than about 1% by weight: \_\_\_\_\_

Consistency at 70°F and 1 atmosphere (circle): solid paste slush slurry liquid gas  
Percent solids by weight: 68.1% Determined visually? \_\_\_ Or by test (specify): paint filter  
Color (shade & hue): brown, dark brown, dark gray Odor (intensity & type): no

**E. Petroleum Contaminated Soil:**

Maximum mg/kg: TPH 16000 GRO 111 DRO 145000 ORO ND BTEX ND Benzene ND

**F. Miscellaneous:** Have you attached a photograph, sketch, or map of the site at the time of sampling with sample locations marked? No

Place where the waste was generated (city, intersection, mile marker, etc.): 5445 National Road, Triadelphia  
Additional comments: \_\_\_\_\_

**G. Documents Enclosed** (check all that apply)

MSDS  Chain of Custody  Lab Certification of Results  Lab Report  Photo \_\_\_\_\_  
Analytical Summary: \_\_\_\_\_ Report \_\_\_\_\_ Map \_\_\_\_\_ Other (specify) \_\_\_\_\_

**H. Generator Certification**

I am legally authorized to represent the Generator. All information presented in this characterization is the result of (1) my knowledge of this waste or (2) laboratory analysis of a representative sample or samples by an EPA method or methods.

I hereby certify that the information supplied on this form and attached to it is complete and accurate, that no negligent or willful omissions of waste characteristics have been made, and that all known or suspected hazards have been disclosed.

Generator's authorized representative; Employer: Fluid Management Solutions, Inc. Title: Sr. EHS Specialist  
Signature: [Signature] Printed name: Carri Tucker Date: 02/22/2023

**I: Application for Minor Permit Modification.** To be completed by the landfill.

Wetzel County Landfill hereby applies for a minor permit modification to dispose of the special waste characterized by this Waste Characterization Form and attached documents.

**Tons Once:** \_\_\_\_\_ **Disposed of by (date):** \_\_\_\_\_ **or Tons per Year** for two years: 20000

Check to request use as daily cover: \_\_\_\_\_ **Notes:** \_\_\_\_\_

**Notes:** \_\_\_\_\_

**Signature:** TGGadd

**Title:** Environmental Compliance Manager

**Date:** 2/22/23



**Analytical Guidelines for Special Waste**  
 Laws, Rules, Policies, or Other Guidelines May Take Precedence

Waste	Analyses								
<p><u>All wastes</u>, number of samples</p>	<table border="1" data-bbox="634 327 1219 554"> <thead> <tr> <th>Amount</th> <th>Analyze one sample per:</th> </tr> </thead> <tbody> <tr> <td>First 3,000 tons</td> <td>300 tons</td> </tr> <tr> <td>Next 6,000 tons</td> <td>600 tons</td> </tr> <tr> <td>Each Additional 1,000 tons</td> <td>1,000 tons</td> </tr> </tbody> </table> <p>Samples must be composite samples. If these results are so variable that they suggest portions of the waste may be hazardous or otherwise unsuitable for MSW disposal, additional analyses will be required or the request will be denied. For very uniform wastes, fewer samples may be accepted if agreed to before sampling.</p>	Amount	Analyze one sample per:	First 3,000 tons	300 tons	Next 6,000 tons	600 tons	Each Additional 1,000 tons	1,000 tons
Amount	Analyze one sample per:								
First 3,000 tons	300 tons								
Next 6,000 tons	600 tons								
Each Additional 1,000 tons	1,000 tons								
<p><u>All wastes</u>, what to analyze for</p>	<p>Analyze for all regulated contaminants and properties that reasonably may be expected to be present. The burden is upon the <u>generator</u> to prove that the waste is nonhazardous and that it conforms to WVDEP policies and guidelines.</p>								
<p><u>Specific wastes</u>: In addition to the above, analyze the following specific wastes for:</p>									
<p>Waste contaminated by metallic mercury or mercury compounds</p>	<p>Total mercury TCLP mercury</p>								
<p>Metal-contaminated waste</p>	<p>TCLP for metals on the TCLP list</p>								
<p>Oil and gas exploration and production sludge, mud, solids, etc.</p>	<p>Percent solids by evaporation, EPA method 160.3 or 2540 Plus, the analyses for metal-contaminated wastes Plus, the analyses for petroleum contaminated soils</p>								
<p>Oil-water separator sludge or solids, dried or moist</p>	<p>Percent solids by evaporation, EPA method 160.3 or 2540 Plus, the analyses for petroleum contaminated soils</p>								
<p>Petroleum-contaminated soil</p>	<p>TPH: ORO, DRO, and/or GRO as indicated by the expected contaminants Semi-Volatiles if DRO is &gt; 100 mg/kg; alternatively, skip the total semi-volatiles analysis and do TCLP semi-volatiles Total concentration of TCLP Semi-Volatiles. If any compound is present at greater than 20 times its TCLP limit, perform TCLP for that compound Total lead if the petroleum may have contained lead; alternatively, skip the total lead analysis and do TCLP lead TCLP lead if total lead is &gt; 100 mg/kg</p>								
<p>Sludge, filter-pressed sludge or dried sludge</p>	<p>Percent solids by evaporation, EPA method 160.3 or 2540</p>								
<p>Solidified sludge</p>	<p>Solidified by generator: Percent solids by EPA method 160.3 or 2540 Solidified by landfill: Paint filter</p>								

# ATTACHMENT G



west virginia department of environmental protection

Division of Water and Waste Management  
601 57<sup>th</sup> Street SE  
Charleston, WV 25304  
Phone: (304) 926-0465  
Fax (304) 926-0456

Jim Justice, Governor  
Austin Caperton, Cabinet Secretary  
www.dep.wv.gov

December 1, 2017

Mr. Terry Gadd, Environmental Compliance Manager  
Wetzel County Sanitary Landfill  
Route 1, Box 156A  
New Martinsville, West Virginia 26155

Re: Wetzel County Landfill Revised  
Radiation Monitoring Plan

Dear Mr. Gadd:

This office received a revised Radiation Monitoring Plan for the Wetzel County Landfill from you by e-mail on March 27, 2017 and additional information on November 13, and November 28, 2017. The technical staff of the Solid Waste Permitting Unit has reviewed your revised plan and has no further objections at this time.

Should you have any questions or require further assistance regarding this matter, please contact Mr. David Johnston at (304) 926-0499 ext. 1296.

Sincerely,

A handwritten signature in cursive script, appearing to read "S. Mandirola".

Scott G. Mandirola  
Director

cc: Ryan Inch, P.E., Wetzel County Landfill  
Jason Frame, WVDHHR  
Steve Cook, EE Inspector  
Tonya Mather, Inspector Supervisor  
OEE Regional Office

Promoting a healthy environment.

# Radiation Monitoring Plan

## Wetzel County Landfill

1521 Wetzel County Landfill Road  
New Martinsville, WV 26155

Permit Number: SWF 1021

November 6, 2014  
Revised October 31, 2017



Wetzel County Landfill

Radiation Monitoring Plan (RMP)

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- B. Field Survey Sheet and Instructions
- C. Form 1W - Radiological Waste Disposal Form
- D. Radioisotope Disposal Approval List
- E. Summary Checklist for Cross-referencing of Containers with Lab Results

ATTACHMENTS

- 1A: Fixed Radiation Monitoring Equipment Specifications
- 1B: Potable Radiation Monitoring Equipment Specifications
- 2 : Site Drawing - Designated Radiation Monitoring Area

Wetzel County Landfill

Radiation Monitoring Plan (RMP)

1. PURPOSE OF PLAN:

- To respond appropriately to situations that may indicate the presence of radioactive material (RAM) in waste entering the landfill.
- To specify the type of fixed detectors and portable detectors that will be utilized in such situations.
- To designate responsible individuals to respond to such situations.
- To described the measures to ensure that personnel exposure from RAM is as low as reasonably achievable.
- To ensure that the ultimate management or disposal of the RAM follows state/federal regulations.
- To describe the recordkeeping requirements that shall be used and maintained during responses to such situations.
- To specify the training of all persons involved in the implementation of the plan.
- To implement the requirements set forth in West Virginia Code WV 33SCR1.5.6.d as shown in **Appendix A**.

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**2 DEFINITIONS:**

**DRILL CUTTINGS AND ASSOCIATED DRILLING WASTES:** means the broken bits of solid material and drilling mud removed from a borehole drilled by rotary, percussion, or auger methods, but does not include wastes generated during the completion process or derived from the hydraulic fracturing process, including but not limited to, flowback solids and liquids, brine, tank bottoms, pit cleanout material and sludges, filters and filter media, pipe scale, used frack sand and proppants, etc.

**APPROVED MEDICAL WASTE:** means a medical radionuclide with a half-life of less than 65 days, listed in Appendix D.

**COMPLETION WASTE:** means wastes generated during the completion or production processes or derived from the hydraulic fracturing process associated with horizontal natural gas well development, including without limitation, flowback solids, brine, tank bottoms, pit cleanout material and sludges, filters and filter media, pipe scale and used fracturing sand and proppants. Completion or production waste does not include any waste containing radioactive tracers regulated by the Nuclear Regulatory Commission (NRC), unless the generator of the waste has obtained permission from the NRC to dispose of this waste in a West Virginia landfill.

**CERTIFIED RADIOACTIVE WASTE SURVEYOR (CRWS):** means a person provided with advanced training under the requirements of this plan. Responsibilities include conducting surveys, determining radioactive levels (dose rates), making isotopic identification of radioactive materials, implementing disposal options or off-site shipping requirements as necessary and completing all necessary administrative and record keeping requirements.

**CERTIFIED RADIOACTIVE WASTE WEIGHMASTER:** means a person provided with basic training under the requirements of this plan. Responsibilities include understanding when a vehicle has activated the radiation alarm, directing the driver and vehicle to the designated staging area, contacting the Certified Radioactive Waste Surveyor to respond to incidents.

**DHHR:** Department of Health and Human Resources

**RAM:** Radioactive Material

**SURVEY / DOSE RATE UNITS:**

mR/hr: milliroentgens per hour

uR/hr: microroentgens per hour

Note: 1 mR/hr = 1000 uR/hr

Wetzel County Landfill

Radiation Monitoring Plan (RMP)

3. PLAN IMPLEMENTATION:

The company's Environmental Compliance Department is responsible for overseeing the general implementation of the plan, including provisions for making administrative or operational modifications to the plan, and ensuring the scheduling of equipment calibrations and the scheduling of employee training.

The General Manager or designated on-duty manager is responsible for the day-to-day implementation and execution of the plan.

All personnel actually or potentially involved with the implementation of the plan will receive initial orientation/training in the principles of radiation and training in practical applications. In addition, personnel will undergo periodic training/refresher courses specific to his/her responsibilities.

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

4. **MONITORING EQUIPMENT:**

(4)(A) Fixed/Stationary Monitoring Equipment.  
*(see Attachment 1A for complete specifications)*

The fixed/stationary monitoring equipment consists of one (1) set of two (2) detectors.

The equipment will be capable of detecting radiation at an exposure rate of at least 10 microroentgens per hour (uR/hr) above background.

The detectors shall be mounted directly opposite each other at the entrance to the in-bound scale. This shall enable the detectors to monitor the entire vehicle as it passes onto the scale. A digital read-out device (meter) shall be installed, mounted in the scale house, showing the count rate on any vehicle passing through the detectors. An audible and visual alarm shall be activated when radiation is detected at the pre-set level indicated above.

(4)(A)(i) Background Determination

The equipment shall perform continuous system diagnosis and background adjustments are made at 30-second intervals, accomplished through the equipments programming.

(4)(A)(ii) Fixed Equipment Daily Check

The equipment shall be tested on a daily basis prior to the start of operations. A Cesium-137 check source shall be presented to each detector to ensure the radiation alarm is activated.

A print out of test results for each detector shall be kept on file at the scale house.

Wetzel County Landfill

Radiation Monitoring Plan (RMP)

(4)(A)(iii) Fixed Equipment Calibration

The equipment shall be field calibrated (according to manufacturer's recommendations) prior to initial operation and be calibrated annually. A certificate of calibration shall be kept on file in the scale house.

(4)(B) Portable/Handheld Monitoring Equipment  
*(see Attachment 1B for complete system specifications)*

The portable/handheld equipment shall be capable of detecting radiation between 10 uR/hr and 10,000 uR/hr, and shall be able to be utilized to determine contamination on a vehicle, and be capable of determining the isotope of the detected radioactive material.

(4)(B)(i) Portable Equipment Check

The equipment shall be tested prior to use when needed. A Cesium-137 check source shall be presented to the unit to ensure radiation is detected and the Cesium isotope is determined.

(4)(B)(ii) Portable Equipment Calibration

The equipment shall be calibrated every two years. A certificate of calibration shall be kept on file in the scale house.

During the calibration period (not to exceed two-weeks), a portable unit of comparable specifications and capabilities will be utilized.

(4)(C) Failure of equipment

If the fixed/stationary detectors fail, the portable unit shall be utilized to monitor radiation in vehicles according to the procedures outlined in Section 5. If the portable unit is unable to be utilized, waste that activates the radiation alarm shall not be accepted until the unit is operable or replaced.

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**5. ALARM ACTIVATION PROCEDURES:**

**5(A) Procedures relating to the receipt of drill cuttings & associated drilling wastes**

If the fixed monitoring equipment alarm is activated during the receipt of a load of drill cuttings / associated drilling waste, the Certified Radioactive Waste Weighmaster will direct the driver of the vehicle to the designated staging area as indicated on **Attachment 2**.

The vehicle will be detained and the subsequent steps will be followed:

**(5)(A)(i) RAM Determination**

The landfill's Certified Radioactive Waste Surveyor (CRWS) will be notified to respond immediately to the incident and complete an investigation:

For each vehicle that has activated the alarm, the CRWS will complete a Field Survey Sheet (see **Appendix B**), and a Form 1W – Radiological Waste Disposal Form (see **Appendix C**) - which will be submitted, within 24 hours of the alarm being activated, to the West Virginia DEP and the DHHR.

The CRWS will take all necessary precautions to ensure workers' safety prior to surveying the vehicle. The designated staging area will be quarantined and all personnel, including the driver, will be removed from the area. The staging area will be maintained to create a specific isolation distance from any building or employee activity.

The investigation survey will then be conducted as follows:

- The CRWS will utilize a field survey sheet (see **Appendix B**) to record all information determined during the survey.
- The CRWS will survey the vehicle at a distance of 5 cm from the outside of the container with the portable monitoring equipment. Dose Rate readings from the mid point / mid-height of each side, front and back will be taken and the highest reading will be taken.

## Wetzel County Landfill

### Radiation Monitoring Plan (RMP)

- If the survey reveals a high reading that is equal to or greater than 10uR/hr above background, the waste in the vehicle will not be permitted to be disposed of. The CRWS will then place caution tape or rope and appropriate radiation caution signs, around the vehicle to create an isolation area of 10 feet. The disposition of the waste will follow the appropriate procedures outlined in Section (5)(A)(iii).
- If the survey fails to reveal the presence of RAM, the CRWS, with the portable survey unit, will scan the driver to determine if he/she has activated the alarm. If the inspection indicates the driver himself has triggered the alarm because of having received medical treatments involving RAM, then another driver will drive the truck back through the monitors. If no alarm occurs, then no further investigative action under this plan is necessary and the waste in the vehicle will be permitted for disposal.
- If the survey reveals the presence of RAM less than 10uR/hr above background then the waste in the vehicle will be permitted for disposal.

#### (5)(A)(ii) RAM Contamination Determination

All external surfaces of the vehicle that appear to be visually contaminated with waste, will be evaluated to verify the presence of RAM contamination. Most likely areas where the outside of the vehicle may encounter RAM are the tailgate and the openings to the waste container although all areas deemed potentially contaminated will be evaluated. The following procedures will be conducted:

- Utilizing appropriate PPE, the CRWS will wipe the areas where the potential contamination may exist. Using a paper towel, or other suitable product, the CRWS will wipe/collect a sample of material and present the material to the portable monitoring equipment, at a distance of at least 10 feet from the vehicle, and the readings are recorded. The field sheet utilizes a calculation that determines if contamination exists. If contamination is deemed present, then the waste in the vehicle will not be permitted for disposal and the facility will call the WVDEP, Department of Water and Waste Management, Office of Solid Waste, Tel: (304) 926-0499, and WVDHHR, Bureau of Public Health, Office of Environmental Health Services Radiological Health Program, Tel: (304) 356 4303, for further guidance.



Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**(5)(A)(iii) Waste Disposition**

If it is determined that the waste cannot be disposed of under the existing requirements of this plan, then the following options will be considered:

**5(A)(iii)(a) Direct Disposal**

The load will be permitted to be disposed of, in which case the landfill will require written authorization from WVDEP, Department of Water and Waste Management, Office of Solid Waste, Tel: (304) 926-0499, and WVDHHR, Bureau of Public Health, Office of Environmental Health Services Radiological Health Program, Tel: (304) 356 4303.

**5(A)(iii)(b) Return load to Generator or other approved location**

The load will be returned to the generator, to the physical location from where the load originated, or another location approved by the DHHR/DEP. Prior to the release of any vehicle containing RAM, the weighmaster will indicate on the original manifest that the load was rejected due to the presence of radioactive materials. The Facility will complete a Form 1-W Radiological Waste Disposal Form and call the WVDEP, Department of Water and Waste Management, Office of Solid Waste, Tel: (304) 926-0499, and WVDHHR, Bureau of Public Health, Office of Environmental Health Services Radiological Health Program, Tel: (304) 356 4303, for procedures on securing any necessary authorizations to return the vehicle back to the highway.

Please note that at no time during this process will the landfill accept title to such waste or represent itself as the generator of the RAM.

**(5)(B) Procedures relating to receipt of waste other than drill cuttings or associated drilling wastes.**

If the fixed monitoring equipment alarm is activated during the receipt of such waste the Certified Radioactive Waste Weighmaster will direct the driver of the vehicle to the designated staging area as indicated on **Attachment 2**.

The vehicle will be detained and a radiological survey will be conducted.

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**5(B)(i) Procedures relating to receipt of medical waste**

For each vehicle that has activated the alarm, the CRWS will complete a Field Survey Sheet (see **Appendix B**)

If the survey indicates the presence of a medical radioisotope, facility personnel will review the Radioisotope Disposal Approval List (**Appendix D**) to determine if the RAM can be accepted for disposal.

If the isotope is not on the list the facility will call the WVDEP, Department of Water and Waste Management, Office of Solid Waste, Tel: (304) 926-0499, and WVDHHR, Bureau of Public Health, Office of Environmental Health Services Radiological Health Program, Tel: (304) 356 4303, for further guidance.

**5(B)(ii) Procedures relating to non-medical waste other than that described in (B)(iii) - Completion or Production Waste**

For each vehicle that has activated the alarm, the CRWS will complete a Field Survey Sheet (see **Appendix B**), and a Form 1W – Radiological Waste Disposal Form (see **Appendix C**) - which will be submitted, within 24 hours of the alarm being activated, to the West Virginia DEP and the DHHR.

**5(B)(iii) Procedures relating to receipt of Completion or Production waste.**

All such waste will be first approved for disposal by the WV Department of Environmental Protection and will be disposed of in the cell dedicated to the disposal of Oil and Gas waste.

Each vehicle presenting such waste for disposal shall be accompanied by a manifest or laboratory report or other suitable documentation certifying that the contents of the waste container have been tested for combined concentration of Radium-226 and Radium-228. All testing shall be conducted by a laboratory registered in West Virginia. The said documentation shall include the results, chain of custody and indicate the name or serial number or other suitable identification of the container to which the results relate.

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

Landfill personnel shall upon receipt on such a vehicle, request a copy of the documentation verifying that the radiological testing has been completed and shall check the name / serial number or other markings on the container and verify that it matches with the designation on the lab documentation.

The landfill will maintain a summary checklist providing a record of such documentation verification (See Appendix E).

5(B)(iii)(a) Procedures for vehicles without proper documentation

If any of following three scenarios is present the vehicle will not be permitted further entry into the facility and will be requested to return to its place of origin until, or unless, proper documentation can be subsequently provided.

- (1) A vehicle arrives at the facility without said documentation
- (2) The waste in the container cannot be matched with said documentation
- (3) The Radium levels on the lab report are greater than 50pCi/g or 100uR/hr

5(B)(iii)(b) Procedures for vehicles with proper documentation

The following designates proper documentation:

- (1) Test results with Radium levels no greater than 50pCi/g
- (2) The waste in the container can be matched with said documentation

Vehicles that are accompanied by the appropriate documentation will be permitted further entry to the facility and subject to the following procedures:

If the fixed monitoring equipment alarm is activated during the receipt of a load of Completion or Production waste, the Certified Radioactive Waste Weighmaster will direct the driver of the vehicle to the designated staging area as indicated on Attachment 2.

The landfill's Certified Radioactive Waste Surveyor (CRWS) will be notified to respond immediately to the incident and complete an investigation:

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

For each vehicle that has activated the alarm, the CRWS will complete a Field Survey Sheet (see Appendix B).

The CRWS will take all necessary precautions to ensure workers' safety prior to surveying the vehicle. The designated staging area will be quarantined and all personnel, including the driver, will be removed from the area. The staging area will be maintained to create a specific isolation distance from any building or employee activity.

The investigation survey will then be conducted as follows:

- The CRWS will utilize a field survey sheet (see Appendix B) to record all information determined during the survey.
  - The CRWS will survey the vehicle at a distance of 5 cm from the outside of the container with the portable monitoring equipment. Dose Rate readings from the mid point / mid-height of each side, front and back will be taken and the highest reading will be taken.
- Once the survey has been completed, the vehicle will be permitted to proceed to the disposal area unless the waste in the vehicle exhibits excessively high dose rates or if the radio-isotope is determined to be something other than Radium-226 or Radium-228 as described as follows:

5(B)(iv) Vehicles with high dose rates.

If the generator provides results that are no greater than 50 pCi/g. for combined concentration of Ra-226 and Ra-228, the landfill may accept the waste with no restrictions on dose rate. However, the landfill does exercise its right to reject any waste that exceeds a dose rate of 50mR/hr (50,000uR/hr) as determined by a dose-rate survey.

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**5(B)(v) Waste containing isotopes other than Ra-226 or Ra-228**

Any load that is determined to contain radio-isotopes other than Ra-226 or Ra-228 will result in conference with the DEP and DHHR as to the next course of action.

**Note:** Form 1-W will not be required to be completed for Completion or Production Wastes that are accepted at the landfill. Although any loads of Completion or Production waste that are required to be rejected will conform to the requirements of Section 5(A)(iii)(b) above.

**5(C) Procedures relating to a driver's refusal for vehicle to undergo radiological survey.**

If a driver, whose vehicle has activated the radiation alarm, leaves the facility prior to undergoing radiation survey, the facility will contact the Local police department and the WVDEP, Department of Water and Waste Management, Office of Solid Waste, Tel: (304) 926-0499, and WVDHHR, Bureau of Public Health, Office of Environmental Health Services Radiological Health Program, Tel: (304) 356 4303, to report the incident. In such circumstances, the facility will attempt to retrieve as much information as possible regarding the driver and vehicle including, including driver's name, company name & address, vehicle license plate number and vehicle make/model.

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**6. RECORD KEEPING**

The records shall include the following:

- Detector Daily Check Source Response Log.
- Annual Fixed Detector Calibration Report
- Two-year Portable Survey Meter Calibration Report
- Field Survey Sheet and waste receipt documents
- Documentation relating to notifications to DEP/DHHR.
- Documentation relating to rejections and off-site shipment of waste
- Documents relating to waste / testing cross-referencing
- Training Records

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**7. PLAN AMENDMENTS**

The plan will be reviewed and amended as a result of any of the following situations:

- When applicable state/federal regulations or policies are revised.
- The plan fails during an incident
- The mode of the facility operation changes
- The monitoring equipment is changed
- The designated staging area changes
- As otherwise required by the DEP
- Plan Amendments will be submitted to the WVDEP and DHHR for review and approval

Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

**8. TRAINING**

**1. Basic Radiation Training Class (2 hr class):**

The class is for weighmasters - who will be the first persons to react to the activation of a radiation alarm. Duties and responsibilities include understanding when a vehicle has activated the radiation alarm, directing the driver and vehicle to the designated staging area, contacting the Certified Radioactive Waste Surveyor (CRWS) to respond to incidents.

a. This class, which will require at least 2 hours instruction, and will encompass:

- Radiation Basics
- Radiation Biological Effects
- Use of fixed monitoring Equipment
- Radiation Exposure Reduction Techniques (Time/Distance/Shielding)
- Applicable Federal & State Regulations
- RMP Overview

b. A well-written Quiz will be prepared and implemented, and filed for regulatory review

After successful completion of the course and satisfactory participation in the quiz, personnel will be provided with a certification as Certified Radiation Waste Weighmaster.

**2. Advance Radiation Training Class (2 hr class - in addition to Basic Training):**

This class is for personnel who will respond to incidents that may indicate the presence of RAM in the wastestream. Duties and responsibilities include conducting surveys, determining radiation levels (dose rates), making isotopic identification of radioactive materials, implementing disposal options or off-site shipping requirements as necessary and completing all necessary administrative and record keeping requirements.

This class will also include training on the interpretation of lab results that are included with loads containing Completions and Production Wastes.



Wetzel County Landfill

**Radiation Monitoring Plan (RMP)**

- a. The Basic Radiation Class must be completed prior to taking the Advance Training Class, which will encompass:
  - Radiation Instrument Theory
  - Radiation Instrument Practical Skills
  - Survey Procedures/Documentation – use of RMP FORMS
  - PPE & Control Procedures (includes preventing unauthorized releases of RAM)
  - Mock scenarios involving various sources for student realization of practical problems.
- b. A well-written Quiz will be prepared and implemented, and filed for regulatory review

After successful completion of the course and satisfactory participation in the quiz, personnel will be provided with a certification as Certified Radiation Waste Surveyor (CRWS).

**3. Retraining**

Every 3 years, a 2 hr retraining/refresher class will be given to Basic Level students and Advanced Level students.

**4. Trainer requirements:**

- a. Initial Basic and Advanced Training will be provided by a Radiation Protection Officer trained in field of Radiation and familiar with the RMP.
- b. Re-training will be conducted by a CRWS trained under the requirements of this plan.
- c. New employees will be trained as soon as practicable by a Radiation Protection Officer trained in field of Radiation and familiar with the RMP. Interim training will be conducted by CRWS trained under the requirements of this plan until a Radiation Protection Officer trained in field of Radiation and familiar with the RMP is available to provide required training, not to exceed three months after hire date.

Appendix A

West Virginia Code  
as it pertains to Radiation Monitoring

## Appendix A

### West Virginia Code as it pertains to Radiation Monitoring

#### *5.6.d. Radiation Monitoring*

*5.6.d.1. All Solid Waste Facilities that accept drill cuttings and associated drilling waste for disposal must install fixed radiation detection equipment at the entrance to the facility. All wastes generated in the exploration, production and development of oil and natural gas and associated activities must be evaluated by this equipment. The facility must also have a portable radiation monitor capable of determining dose rate and the presence of contamination on a vehicle. The facility shall provide staff with documented training in the operation of all onsite radiation monitors.*

*5.6.d.2. The fixed detector must be capable of measuring exposure rates from ten microroentgens per hour ( $10 \mu\text{R/hr}$ ) to greater than fifty milliroentgens per hour ( $>50\text{mR/hr.}$ ). The instrument must be maintained and calibrated according to manufacturer specifications.*

*5.6.d.2. The detector elements must be configured to be as close as practical to the waste load and in an appropriate geometry to monitor the waste.*

*5.6.d.3. The facility shall set the detector to sound an alarm if the reading on the detector exceeds  $10\mu\text{R/hr.}$  above average local background.*

*5.6.d.4. If a load of drilling cuttings or associated drilling waste is confirmed to be less than ten microroentgens per hour ( $10 \mu\text{R/hr.}$ ) above average local background level, the waste may be disposed of in the facility. If the load of waste is confirmed to be equal to or greater than  $10 \mu\text{R/hr}$  above average local background level, the combined concentration of Radium 226 and Radium 228 must be determined. The combined concentration must be analyzed by a State approved method. If the combined concentration in the waste is less than five picocuries per gram ( $5\text{pCi/gr.}$ ) above average local background.*

**INTERPRETIVE RULE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WASTE MANAGEMENT**

**SERIES 1A  
DISPOSAL OF COMPLETION OR PRODUCTION WASTE**

**§33-1A-1. General.**

1.1. Scope. -- This rule provides guidance and direction to commercial solid waste facilities for the proper disposal of completion or production waste as a special solid waste generated from horizontal well sites, pursuant to the provisions of the Solid Waste Management Rule, 33 C. S. R. 1.

1.2. Authority. -- W. Va. Code §§ 22-15-5(a) and 22-15-8(h)

1.3. Filing. -- June 22, 2017.

1.4. Effective Date. -- August 1, 2017.

1.5. Applicability. -- This rule is applicable to the commercial solid waste facilities that are permitted to take drill cuttings and drilling waste generated from horizontal oil and natural gas well sites pursuant to the West Virginia Solid Waste Management Act, W. Va. Code § 22-15-8(g).

**§33-1A-2. Definitions.**

Unless the context in which used clearly requires a different meaning, the definitions contained in W. Va. Code § 22-15-2 and 33 C.S.R. 1 § 2 apply to this rule, in addition to the definition set forth below.

2.1. "Completion or production waste" means wastes generated during the completion or production processes or derived from the hydraulic fracturing process associated with horizontal natural gas well development, including without limitation, flowback solids, brine, tank bottoms, pit cleanout material and sludges, filters and filter media, pipe scale and used fracturing sand and proppants. Completion or production waste does not include any waste containing radioactive tracers regulated by the Nuclear Regulatory Commission (NRC), unless the generator of the waste has obtained permission from the NRC to dispose of this waste in a West Virginia landfill.

**§33-1A-3. Acceptance and Handling of Completion or Production Waste as a Special Solid Waste.**

## 33CSR1A

3.1. Prior to the acceptance and disposal of completion or production waste, a permittee shall apply for and obtain a special waste minor permit modification in accordance with subsection 4.13 of the Solid Waste Management Rule.

3.2. The permittee shall dispose of all completion or production waste in a cell(s) dedicated solely to the disposal of drill cuttings and associated drilling waste, as established in the West Virginia Solid Waste Management Act and the Solid Waste Management Rule.

3.3. The permittee shall comply with all liner system requirements set forth in the Solid Waste Management Rule related to the construction of separate cells for the disposal of drill cuttings and associated drilling waste and all radiation monitoring requirements set forth in Section 3.5 below.

### 3.4. Waste Profiling Requirements.

3.4.a. The facility must obtain from the generator results from at least one representative composite sample of the waste, unless otherwise approved by the Secretary. At a minimum, the facility must submit the following analyses with each application for a special waste minor permit modification: Toxicity Characterization Leaching Procedure (TCLP) Metals, EPA Method 1311; TCLP Volatile Organic Compounds, EPA Method 8260B; and TCLP Semivolatile Organic Compounds, EPA Method 8270C. Sampling results for these parameters must not exceed the limits of 40 C.F.R. § 261.24. The facility must also submit analyses for Total Petroleum Hydrocarbons (TPH), EPA Method 8015C, and Percent Solids, EPA Method Number 160.3 or 2540.

3.4.b. In addition to analyses set forth in subdivision 3.4.a above, the permittee must analyze each load of completion or production waste entering the facility for the combined concentration of Radium 226 and Radium 228, and each load shall be accompanied by the test results for that load. The analysis must be done by a laboratory certified by the Department's Environmental Laboratories Certification program. If the combined concentration in the waste is less than or equal to fifty picocuries per gram (50pCi/gr.), the facility may accept the waste for disposal. If the values are greater than 50pCi/gr, the facility shall reject the load.

### 3.5. Radiation Monitoring

3.5.a. The facility must also have a portable radiation monitor capable of determining dose rate and the presence of contamination on a vehicle. The facility shall provide staff with documented training in the operation of all onsite radiation monitors.

3.5.b. The radiation monitor installed at the facility pursuant to the Solid Waste Management Rule must be capable of measuring exposure rates from ten microroentgens per hour (10  $\mu$ R/hr) to greater than fifty milliroentgens per hour (>50 mR/hr) (or equivalent units). The instrument must be maintained and calibrated according to manufacturer specifications.

3.5.c. The detector elements must be configured to be as close as practical to the waste load and in an appropriate geometry to monitor the waste.

### 33CSR1A

3.5.d. The facility shall set the detector to sound an alarm if the reading on the detector exceeds 10 $\mu$ R/hr (or equivalent units) above local background.

3.5.e. For each radiation alarm generated for completion or production waste the facility shall document the fixed detector reading and the associated combined concentration of Radium-226 and Radium-228 provided with the load. This information shall be supplied both to the Department and to the West Virginia Department of Health and Human Resources' (DHHR) Radiological Health Program on a monthly basis.

3.5.f. Facilities accepting completion or production waste must submit to the DEP a Radiation Monitoring Plan that outlines the facility's procedures for managing the waste.

#### **§33-1A-4. Daily Cover**

4.1. The Secretary may require daily cover in excess of that required in the Solid Waste Management Rule on these drilling waste cells that receive completion or production waste if, in the Secretary's discretion, extra cover is needed to protect the environment or the health, safety, and welfare of the public.

Appendix B

Field Survey Sheet & Instructions

Wetzel County Landfill  
Field Survey Sheet

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Manifest Number: \_\_\_\_\_

Transporter Name: \_\_\_\_\_ Driver Name: \_\_\_\_\_

Note: If Alarm caused by driver circle: YES: No further action necessary

WASTE TYPE (CIRCLE):

Drill Cuttings \_\_\_\_\_ Medical \_\_\_\_\_ Other (specify) \_\_\_\_\_

Background dose rate: \_\_\_\_\_ (uR/hr)

VEHICLE READINGS:

SECTION 1. FOR DRILL CUTTINGS/ASSOCIATED DRILLING WASTE ONLY

(i) Perform Surface Isotopic / Dose Rate Survey on vehicle container (uR/hr):

Mid-height / midpoint Front \_\_\_\_\_ Mid-height / midpoint Back \_\_\_\_\_

Mid-height / midpoint LHS \_\_\_\_\_ Mid-height / midpoint RHS \_\_\_\_\_

Highest of all four readings \_\_\_\_\_

ISOTOPE: \_\_\_\_\_

If highest reading < 10uR/hr above BKG, follow RMP disposal procedures / notifications.  
If highest reading => 10uR/hr above BKG follow RMP procedures for returning a load

(ii) Perform Contamination Survey

BKG Counts: \_\_\_\_\_ (A) (cps) \*Surface Wipe Reading: \_\_\_\_\_ (B) (cps)

Surface Wipe Calculation (using a 50% efficiency rate):

(B) - (A) = \_\_\_\_\_ (C) (cps); (C) x 60 = \_\_\_\_\_ (D) (cpm); (D) / 0.5 = \_\_\_\_\_ (dpm/300cm<sup>2</sup>)  
Surface Wipe Result

If result < 6,600 dpm/300 cm<sup>2</sup> follow RMP disposal procedures / notifications.  
If result > 6,600 dpm/300 cm<sup>2</sup> follow RMP follow protocol for rejecting / returning a load



Wetzel County Landfill  
Field Survey Sheet

SECTION 2. FOR MEDICAL WASTE ONLY

(i) Perform Surface Isotopic / Dose Rate Survey on vehicle container (uR/hr):

Surface Dose Rate (highest reading on container) \_\_\_\_\_

ISOTOPE: \_\_\_\_\_

If Isotope is on Disposal Approval List follow RMP disposal procedures

If Isotope is NOT on Disposal Approval List follow RMP notification procedures

SECTION 3. FOR OTHER WASTE ONLY

(i) Perform Surface Isotopic / Dose Rate Survey on vehicle container (uR/hr):

Surface Dose Rate (highest reading on container) \_\_\_\_\_

ISOTOPE: \_\_\_\_\_

Follow RMP disposal / notification procedures

Form Completed By (print): \_\_\_\_\_ (sign): \_\_\_\_\_

Appendix C

Form 1W  
Radiological Waste Disposal Form

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Appendix C



Department of Health and Human Resources  
 Bureau for Public Health  
 Radiological Waste Disposal Form  
 Form 1W

Generator's or Shipper's Name and Mailing Address	Phone
Transporter #1 Company Name and Address	Phone
Transporter #2 Company Name and Address	Phone
Designated Commercial Waste Facility Name and Address	Phone

Description of NORM waste (e.g. scale, soil, other)	MicroR/hr reading	Activity Concentration pCi/gm	Number of Containers	Container Type	Total Quantity	Unit Wt/Vol	Time/Date	SWPU ID # (permit # waste disposed under)

Attach additional information regarding the following questions (if needed):

Are there any other sources of radioactivity known to be in the vehicle? (e.g. medical source from driver, etc.)

Post-alarm actions taken by the waste facility/transporter:



Special Handling Instructions and Additional Information:

Department of Health and Human Resources  
Bureau for Public Health  
Radiological Waste Disposal Form  
Form 1W

INSTRUCTIONS

1. This form must be submitted by fax within 24 hours of initial radiological alarm at the waste facility.

\*If any radiological monitor readings exceed 2.0 mR/hr, contact DIIHR Radiological Health Program immediately and isolate the load on site.

2. The form must be submitted to the Department of Environmental Protection and the Department of Health and Human Resources at the contact information below:

Department of Health and Human Resources  
Bureau for Public Health  
Office of Environmental Health Services  
Radiological Health Program  
Phone: 304-356-4303  
Fax: 304-558-0524

Department of Environmental Protection  
Division of Water and Waste Management  
Office of Solid Waste  
Phone: 304-926-0495  
Fax: 304-926-0456

3. Any supporting analytical or lab testing must be included with form in addition to proof of West Virginia radiological vendor registration (e.g. registration number).

Appendix D

Radioisotope Disposal Approval List

## Appendix D

### Radioisotope Disposal Approval List

The following isotopes will be disposed of in accordance with the requirements of the facility's RMP:

#### Medical radionuclides with Half-Life < 65 days

<b>Radionuclide</b>	<b>Half-Life</b>
Fluorine-18	1.8 Hours
Phosphorus-32	14.3 days
Chromium-51	27.8 days
Gallium-67	3.3 days
Molybdenum-99	66 hours
Technetium-99m	6 hours
Palladium-103	17 days
Indium-111	2.8 days
Iodine-123	13.1 hours
Iodine-125	60 days
Iodine-131	8 days
Xenon-133	5.2 days
Thallium-201	73 hours

Appendix E

Summary Checklist for Verification of  
Waste & Lab Results

