

**PHASE II APPLICATION
CAMP HOPE RUN LANDFILL
BOGGS TOWNSHIP, CLEARFIELD COUNTY, PENNSYLVANIA**

**FORM R1
ATTACHMENT R1-1
Residual Waste Analysis and Classification Plan**

**FORM R1
RESIDUAL WASTE ANALYSIS AND
CLASSIFICATION PLAN**

**PA WASTE LLC
CAMP HOPE RUN LANDFILL
BOGGS TOWNSHIP, CLEARFIELD COUNTY, PENNSYLVANIA**

JUNE 2019

**SMITH GARDNER, INC.
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INTRODUCTION

This plan is intended to serve as a screening mechanism to eliminate the potential for the Camp Hope Run (CHR) Landfill to accept wastes, which are prohibited for disposal. Additionally, this plan establishes a program for the continuous management of waste disposed at the facility. Finally, this plan is intended to allow the acceptance of various residual wastes at the facility that meet the plan criteria without requiring submittal of a major or minor permit modification to the Pennsylvania Department of Environmental Protection (DEP). This plan has been prepared in accordance with the Pennsylvania Residual Waste Management (RWM) regulations and guidance provided by the DEP.

This plan will be reviewed and revised if necessary on an annual basis to reflect changes in DEP-approved sampling and analytical protocols and procedures or if additional waste analysis requirements are established by DEP. Upon revision, the plan will become immediately effective. A copy of the revised plan will be forwarded to DEP for review.

Section A of this plan establishes the waste review and acceptance program for residual wastes to be accepted at the facility. Section B of this plan establishes a program for the management and screening of wastes disposed at the facility. Section C of this plan establishes the waste acceptance criteria and sampling and analytical protocols and procedures.

All records associated with the Waste Analysis and Classification Plan will be maintained at the site for a minimum of five years after initial disposal of a waste stream.

Additionally, all waste deliveries will be monitored for radioactive material in solid waste in accordance with the approved Radiation Protection Plan for the facility.

A. WASTE ACCEPTANCE REQUIREMENTS

The procedures and requirements for acceptance of residual wastes for disposal at the facility are described in the following sections. The procedures and requirements presented in Section 1.0 pertain to the methods for approving or rejecting residual wastes proposed for disposal at the CHR Landfill.

1.0 Residual Waste Streams Proposed for Disposal

The CHR Landfill proposes to accept residual and special handling waste for disposal. The types of residual and special handling waste requested for approval are listed on Table 1. The residual waste groups, waste codes, sampling frequency, sampling protocols and test methods for each group are listed in Table 1. Acceptance criteria for the waste constituents are listed in Table 1A.

1.1 Waste Acceptance Requirements

All residual waste generators of a new waste stream shall submit a completed Form 26R-Chemical Analysis for each waste proposed for disposal at the facility at a minimum on a yearly basis (except for one time disposal events). Also, a current Form 25R-Source Reduction Strategy shall be submitted and maintained for all residual waste generators utilizing the facility (except for one time disposal events).

Recharacterization of waste shall be completed on a Form 26R on a yearly basis at a minimum, or sooner if there is a change in the manufacturing process. The recharacterization requirements for each waste will include the following analytical parameters:

- Required facility-specific parameters presented in Section C; and
- Additional parameters that may be identified during the waste review process.

Each residual waste stream proposed for disposal at the CHR Landfill will be subject to recharacterization in accordance with the currently effective analytical schedules for each waste. Results of the recharacterization event will be compared to the waste acceptance criteria developed in Section C to determine if the waste is acceptable for continued disposal at the facility.

Following characterization, each waste will require continued periodic characterization for the identified parameters of concern. These parameters will be periodically characterized until such time that sufficient analytical data have been collected to verify that those parameters are not of concern to the operation of the facility. The characterization frequency and analytical requirements will be developed on a waste-specific basis by the facility personnel.

The frequency of characterization will be determined utilizing a matrix and will be based on the anticipated variability of the parameters of concern identified above. The analytical program for the periodic characterization will also be developed using a matrix approach. However, this

approach will be limited to include only those parameters that were detected during the recharacterization event that exceeded 80 percent of the waste acceptance criteria developed in Section C.

Figure 1 presents a matrix for the periodic characterizations of currently accepted wastes. This matrix was developed based on available information regarding the waste generation process and the waste's properties. After review of characterization data regarding the waste composition and generating process, this matrix may be updated.

After five periodic characterization events, all analytical data will be evaluated to determine the variability of these parameters. Results of this evaluation may indicate that a reduction in subsequent periodic characterization requirements is warranted. Future periodic characterizations may be reduced or analytical parameters deleted if it can be determined that the variability in the data is consistent and within the limits for waste acceptance developed in Section C.

1.2 Waste Acceptance Procedures

To ensure that an accepted waste can continue to be managed at the facility, characterization data must be submitted in accordance with the schedule established by the facility for the generator. If this condition is met, the following activities will be performed:

- Analytical data will be compared to the waste acceptance criteria; and
- Analytical data will be compared to historical characterization data.

If the characterization data is within the waste acceptance criteria limitations and similar to the historical characterization data, the waste will be accepted. If the characterization data is not within the waste acceptance criteria limitations or are not similar to historical characterization data, the waste will not be accepted (i.e., rejected).

Initial characterization for sewage sludge will include a description of the process(es) used to significantly reduce pathogens or further reduce pathogens as set forth in §271.932, and a description of process(es) used to meet one of the vector attraction reduction standards as specified in §271.933(b)

2.0 New Waste Streams

Generators of residual waste that want to utilize the facility shall submit to PA Waste, LLC a completed Form U with appropriate testing results and a completed Form 25R-Source Reduction Strategy for ongoing waste streams. Generators of virgin fuel contaminated soil shall submit a completed Form FC-1. All FC-1 submissions, independent of tonnage must be submitted to the Department for review and approval prior to any waste being accepted on site.

For large quantity residual waste generators, a Form U and Form 25R are to be submitted to the DEP's Northcentral Regional Office, and copies to Boggs Township and Clearfield County. PADEP has fifteen (15) days to review the information. If no comments are received in this time frame, the waste may be accepted. Requests for disposal of soils contaminated with virgin fuels shall be submitted to the PADEP's Northcentral Regional office and the material may be accepted upon proof of receipt by the PADEP. With regard to asbestos containing waste, a Form U must be submitted to the Department for review and approval prior to any waste being accepted on site and a copy shall be maintained at the facility.

All residual waste, independent of volume, must be submitted through on a Form U to the Department for review and approval prior to any waste being accepted on site. All generators are to include a hazardous waste determination.

The initial characterization requirements for potential new wastes will include the following analytical parameters:

- Required facility-specific parameters presented in Section C and **Tables 2** and **2A**; and
- Additional parameters that may be identified during the waste review process.

Tables 2 and **2A** present a preliminary listing of characterization requirements based on the associated residual waste category (RWC) and other information currently available to the disposal facility. Initial characterization for all new waste streams will be immediately required upon submittal of the DEP Form U. Results of the initial characterization event will be compared to the waste acceptance criteria specified in **Table 1A** and **2A** as described in Section C to determine if the waste can be disposed at the facility. All wastes approved for acceptance at the facility following this initial characterization will be required to periodically repeat and renew the waste characterization testing at least once per annum.

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Following review and approval of the initial waste characterization, certain newly approved wastes for acceptance at the facility may require an increased level of periodic characterization (at a frequency greater than annually) until such time that sufficient analytical data has been collected to verify that those parameters are not of concern to the operation of the facility. Initially, the characterization frequency and analytical requirements will be developed on a waste-specific basis by the facility personnel as described below.

The frequency of the periodic characterizations will be developed using a matrix and will be based on the anticipated variability of the parameters of concern identified above. A statistical evaluation based on the student T-Test confidence level method contained in Chapter 9 of SW 846 for periodic characterization of homogeneous type will be performed. However, this statistical approach will be limited to include only those parameters that were detected and exceeded 80 percent of the waste acceptance criteria developed in Section C.

Figure 1 presents a matrix for the periodic characterizations of newly approved wastes for disposal. This matrix was developed based on general information regarding anticipated wastes and their generation processes and physical properties. After review of new information as part of the DEP Form U submittal regarding the waste generating process, this matrix may be updated.

After five periodic characterization events, all analytical data will be statistically evaluated to determine the variability of these parameters. Results of this statistical evaluation may indicate that a reduction in subsequent periodic characterization requirements is warranted. Future periodic characterizations may be reduced or analytical parameters deleted if it can be determined that the variability in the data is consistent and within the limits for waste acceptance developed in Section C.

Special acceptance requirements are needed for certain waste streams such as municipal ash and auto shredder residue (ASR) which are usually high volume waste and are non-homogeneous.

The proposed procedure for contemporaneous sampling of ASH or ASR waste is to analyze a progressive number of samples from a sampling event. The following procedures describe the method for data evaluation for both Toxicity Characteristic Leaching Procedure (TCLP)

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extractable Resource Conservation and Recovery Act (RCRA) metals analyses and Poly Chlorinated Biphenyls (PCB) determinations for municipal ash and ASR:

- a. A minimum of ten samples are to be collected;
- b. Four of the ten samples selected using a random number generator are analyzed. Four samples are processed and analyzed for all eight TCLP extractable metals and PCB's (for ASR only);
- c. If the results of the confidence interval (CI) developed by the statistical evaluation of the four analyses for TCLP extractable metals and PCB's are below the Table 1A limits, the waste shall be considered acceptable for disposal. The statistical analysis shall be determined based on the Shapiro & Wilk W-test (≤ 50 samples), or alternative method acceptable to the DEP; and
- d. If any of the four samples exceeds the Table 1A limit for any constituent, but the CI of the results of the four analyses are below the Table 1A limits, then the waste will be considered acceptable for disposal.

If any of the four samples exceeds the **Table 1A** limit for any constituent and the CI of the data set exceeds the **Table 1A** limit, the generator will be notified and an aliquot from the original sample(s) analyzed for confirmation. The mean of the original and confirmation results of the sample(s) is calculated and this combined mean is used to recalculate the new data set CI of the ten sample analyses. If the recalculated CI of the event is below the **Table 1A** limit(s), the waste will be acceptable for disposal.

1. There will be two frequency sampling aspects to the municipal ash and ASR waste monitoring program:
 - i. a **Standard Frequency Cycle**; and
 - ii. an **Accelerated Frequency Cycle**.
2. **Accelerated Frequency Cycle**
 - i. In the **Accelerated Frequency Cycle**, one sampling event would be performed each month until ten sets of data have been collected. Historical waste monitoring data generated by the generator will be reviewed to ascertain if there is sufficient data to bypass the **Accelerated Frequency Cycle**.

- ii. If the historical data can be used to calculate a CI, the data will be subjected to Statistical Analysis.
 - iii. A “rolling window” using the data of the events will constitute the characterization of the waste stream.
 3. As long as the CI concentrations, calculated as described in this Section remain below the **Table 1A** limits, the monitoring frequency will continue in the **Standard Frequency Cycle**, which will consist of one sampling event every three months.
 - i. As each new event is completed, the data generated by this event will be incorporated into the “rolling window” and the data from the oldest of the ten events would drop out of the calculation.
 - ii. As long as the “rolling window” CI remains below the Required Concentrations, testing in accordance with the **Standard Frequency Cycle** will continue.
 - iii. If the “rolling window” of any of these parameters exceeds the Required Concentrations but below **Table 1A** limits, the **Accelerated Frequency Cycle** will be initiated until the “rolling window” CI drops below the Required Concentrations, at which time the **Standard Frequency Cycle** will resume.
 - iv. If the “rolling window” of any of these parameters exceeds **Table 1A** limits, disposal of the waste will stop.
 4. As a standard procedure, sufficient sample will be collected at each event as duplicates to allow for confirmation testing should an anomaly appear. If the confirmation sample is used, the result of the mean of the original and the confirmation of this test will replace the original result in the set.

B. SCREENING AND MANAGEMENT PROCEDURES

Once the DEP approves the waste, CHR Landfill will notify the generator of the approval and arrangements will be finalized to have the waste transported to the landfill for disposal.

CHR Landfill will visually screen incoming shipments at the scale house by the scale master to assure that the wastes received are similar to the wastes color, physical state and phases

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identified on Form U. The information concerning the wastes typical physical characteristics will be recorded on the Residual and Special Waste Profile Sheet. An example copy of this form is included in **Appendix B** of this plan. Characteristics of incoming wastes will be compared to the initial information provided by the generators, which is included on the form. A file containing copies of all the forms based on the Form U applications will be kept in the scale house and will be used for comparison purposes. A waste tracking information system will be utilized during the preliminary review of the waste acceptability. An example form that lists the information that will be gathered and retained when each waste load arrives and disposed of at CHR Landfill is listed in **Appendix B**. A Waste Tracking Report form will be utilized to summarize the waste tracking information. An example report form is listed in **Appendix B, Exhibit 2.0**. CHR Landfill will sort information by waste code, alphabetically by generator, or date received. Wastes will also be inspected at the working face by either the landfill superintendent or trained laborer.

The management procedures for the disposal of asbestos containing materials (ACM) require the generator notification of delivery of the material to the landfill, and the completion of a Waste Shipment Record. The generator of the ACM will be provided a copy of the record after disposal of the ACM. A copy of the ACM shipment record is attached in **Appendix C**.

If the waste shipment does not compare to the approved waste, it will be rejected and immediately returned to the generator for retesting or disposal at another approved, suitable site. A record of the event when a waste is rejected will be kept on file as part of the Residual and Specific Waste Profile Sheet and the DEP will be notified.

If the re-analysis of the rejected waste shows that the waste is acceptable for disposal, CHR Landfill will accept the waste after the generator submits a letter stating the cause of variability in the analysis.

Incoming waste shipments will also be screened for radioactive material in accordance with the approved Radiation Protection Action Plan (RPAP) for the Facility (refer to **FORM X - ATTACHMENT X-1**). All vehicles that activate the radiation detector alarm will be directed to the designated area and quarantined and characterized in accordance with Section 7.0 of the RPAP. After proper characterization of the waste it will either be accepted for disposal in accordance with the requirement of the RPAP or removed from the facility.

1.0 Procedures for Waste Rejection

Upon arrival at CHR Landfill and prior to unloading, all wastes will be visually inspected as described previously, and if the inspections indicate that the waste is acceptable, the waste will be routed to the disposal area.

Wastes that fail inspection will not be accepted. In the event that a waste fails to meet the inspection criteria, the waste will immediately be returned to the generator.

The procedure for waste rejection is as follows:

- Waste fails inspection;
- Waste must remain within a designated staging area;
- Facility personnel prepare rejection notice;
- Facility personnel contacts generator and informs of waste rejection; and
- Transportation arranged for waste to be returned to generator.

Rejected waste materials will be noted in the Waste Tracking Report contained in **Appendix B**.

C. WASTE ACCEPTANCE CRITERIA

This section presents the rationale for developing the maximum waste constituent limitations allowable for disposal at the facility that will ensure that the following conditions are met:

- The waste/leachate will not adversely affect or impair the liner system's ability to prevent groundwater degradation;
- The leachate constituents can be effectively treated in accordance with all applicable laws and regulations in a manner that will consistently meet effluent limitations and protect public health, safety, and the environment;
- Wastes accepted at the facility for disposal are non-hazardous; and
- The potential for wastes accepted at the facility to react with other wastes disposed at the facility in a manner that would adversely affect or impair the liner system's ability to prevent groundwater degradation will be negligible.

This section also presents the development of the requisite analytical program, analytical methods, and sampling protocols for wastes accepted at the facility.

Information required to be submitted from the generator should include the following:

- (a) A description and common name of the waste;
- (b) A description of the process that generated the waste;
- (c) A description of the materials used in the generation process;
- (d) A description of the physical/chemical composition of the waste; and
- (e) A description of the methods employed to the sample and to analyze the waste.

Additionally, generator certifications must state that the waste is not hazardous as per 25 PA Code Section 261 and 40 CFR Part 261.

1.0 Maximum General Waste Characteristics

Establishment of the maximum allowable waste/leachate constituent concentration applicable for acceptance and disposal at the landfill facility is based on an evaluation of various sources of information applicable to facility operations and relevant to the management of leachate and protection of the environment. The following sections identify minimum requirements specific to the facility operations, present procedures for evaluating relevant information, and present results of evaluations.

1.1 Identification of Minimum Requirements

The active portions of the facility will be constructed to meet the requirements of the Pennsylvania Municipal Waste Regulations contained in Pennsylvania Code, Title 25, Chapters 271 through 273. These regulations require among other things, that a liner system comprised of two separate geosynthetic liners be incorporated into the design of a landfill to create both leachate collection and leachate detection systems. The proposed facility will be constructed utilizing a liner system comprised of a composite primary liner (geosynthetic membrane and geosynthetic clay liner) and a composite secondary liner (geosynthetic membrane and 6-inch-thick clay subbase layer). Each of the geosynthetic membranes has a minimum thickness of 60 mil.

There is a 20-year history of experience using geomembrane liners of the type planned for this facility (high density polyethylene or HDPE). This has included numerous physical and chemical tests to verify the integrity of this material under simulated use conditions. Testing has included

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subjecting the liner material to various full strength chemicals and diluting chemical mixtures simulating leachate from municipal and industrial wastes as well as actual landfill leachate exposure testing. These tests were conducted utilizing American Society of Testing and Materials (ASTM) Method 9090.

In summary, results of this testing indicated that HDPE liner material is capable of managing all full-strength chemicals except for a very limited number of chemical classes. Specifically, HDPE is not effectively resistant to greater than one percent halogenated aromatic hydrocarbons, greater than ten percent nitric acid solutions, and greater than five percent chlorosulfonic acid solution. In addition, some general chemical classes may soften but not degrade the liner materials when the liner is exposed to full-strength concentrations over time. For these general chemical classes, it has been recommended that the liner material should not be exposed to concentrations exceeding 1,500 milligrams per liter.

Leachate generated by the landfill is planned to be discharged to the Industrial Wastewater Treatment Plant (IWTP) located on the site. The proposed discharge limits for the IWTP are provided in the PA Waste, LLC draft NPDES Permit Analysis Table provided in Appendix A.

To meet these maximum discharge concentrations, the leachate from each waste stream must be less than these concentrations multiplied by a dilution/attenuation factor. A dilution/attenuation factor of 100 was assumed for the CHR Landfill based on the expected efficiency of the planned IWTP. The dilution/attenuation factor is a conservative estimate, however, CHP may seek to revise the factor as site conditions may require based on demonstrated leachate treatment efficiencies and/or other relevant operating conditions.

Additional waste characteristics that must be evaluated include the following characteristic parameters used to determine whether a waste is hazardous as defined by RCRA:

- Toxicity – The maximum concentration of parameters to which the hazardous waste toxicity characteristic applies will be the maximum concentration limits (MCL) set forth in 40 Code of Federal Regulations (CFR) Part 261 and 25 PA Code Chapter 261(a) as shown in **Tables 1A** and **2A**.
- Corrosivity – The limitations for pH will be the hazardous waste limitations set forth in PA Code Chapter 261(a) as shown in **Tables 1A** and **2A**.

- Reactivity – The limitations for reactivity will be the hazardous waste limitations set forth in 25 PA Code Chapter 261(a) as shown **Tables 1A** and **2A**.
- Ignitability – The limitations for ignitability will be hazardous waste limitations set forth in 25 PA Code Chapter 261(a) as shown in **Tables 1A** and **2A**.

Under RWM Regulations, wastes applicable for disposal at non-impoundment residual waste facilities must pass the U.S. Environmental Protection Agency (USEPA) Method 9095 Paint Filter Liquids Test except for containerized liquids less than one gallon in volume.

1.2 Reduction Analysis

The minimum waste leachate constituent requirements presented above were evaluated in order of decreasing allowable concentrations based on the physical components of the facility (i.e., liner material, existing leachate treatment system, etc.) followed by existing permit limitations. A review of the capabilities of the liner system indicates that the HDPE liner is capable of managing almost all constituents of wastes and leachates at 100 percent concentration.

The maximum allowable waste/leachate constituent concentrations must be further reduced to meet the maximum allowable concentration criteria promulgated in 40 CFR 261 and PA Code Title 25 Chapter 261(a). No further reductions in the maximum allowable concentration are necessary at this time until changes in current regulations are promulgated.

1.3 Procedures for Establishing Limitations for Newly Identified Parameters

For wastes containing contaminants for which no concentration limitations have been established, resulting analytical data will be evaluated to ensure that the waste is compatible with other waste disposed at the facility. To determine if the waste will react with other wastes disposed at the facility, the analytical results will be evaluated using procedures similar to those contained in the USEPA document entitled “A Method for Determining the Compatibility of Hazardous Wastes” (EPA 600/2-80-076).

To determine if new waste constituents not currently identified and evaluated by the liner manufacturer’s testing are compatible with the liner material, a formal request will be made to the manufacturer. The request, relevant supporting information, and correspondence will be submitted to the DEP. Subsequent to any aforementioned determination, this plan will be revised.

2.0 Establishment of Required Waste Analysis Program

Each waste applicable for acceptance and disposal at the facility must be analyzed for all parameters identified in this section unless otherwise excluded.

2.1 Hazardous Waste Characterization Parameters

These parameters are identified in 40 CFR Part 261 and 25 PA Code Part 261(a) (see **Tables 1A** and **2A**).

2.2 DEP-Required Parameters for a Class I or Municipal Waste Landfill Facility

These parameters are identified in Instructions for Completion of DEP **Form U**.

2.3 Additional Waste/Generator-Specific Parameters

These parameters include those identified by the generator or landfill facility waste acceptance coordinator in Section A that may induce harm to the landfill facility and waste handling personnel. These parameters will be identified on a waste-specific basis for new wastes applicable for acceptance and disposal at the facility.

In summary, **Tables 1A** and **2A** present a consolidated listing of required waste characterization parameters and MCL's for disposal of wastes at the facility.

3.0 Provisions for Waste Analysis Parameter Exemptions

Certain parameters may be excluded from the required analytical program provided that an appropriate official of the generator certifies, in writing, that the waste does not contain these parameters. In order to exclude certain parameters, the generator must provide certification in accordance with the requirements of the USEPA and DEP.

4.0 Sampling Procedures/Methodologies

The sampling procedures and methodologies that will be used by facility personnel, generators, or representatives of the facility or generator to ensure that accurate and representative samples of the waste are obtained for analysis will be consistent to those contained in USEPA document entitled "Test Methods for Evaluating Solid Waste (SW-856)."

5.0 Analytical Procedures/Methodologies

Sample preparation and test methods for the analytical parameters identified above are incorporated by references as described below:

- Procedures and methods referenced in the most current edition of the USEPA document entitled “Test Methods for Evaluating Solid Waste (SW-846).”
- Procedures and methods referenced in the USEPA document entitled “Methods for Chemical Analysis of Water and Waste (EPA 600/4-79-020).”
- Procedures and methods referenced in the most current edition of the USEPA document entitled “Standard Methods for the Examination of Water and Wastewater” prepared jointly by the American Public Health Association, American Waterworks Association, and Water Environment Federation.
- Other methods approved by the USEPA or DEP.
- For waste-specific parameters for which currently approved test procedures and methods are not available, the intended method will be forwarded to DEP for review and comment seven calendar days prior to analysis.

TABLES

**TABLE 1A
PROPOSED WASTE ACCEPTANCE CRITERIA
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RESIDUAL WASTE ANALYSIS AND CLASSIFICATION PLAN**

pH	>2 and <12.5	Non-hazardous ^(b)	Method 9045 ^(c)	Once	Annually
Flash Point/Ignitability	>60°C/ Not Ignitable	Non-hazardous ^(b)	Pensky-Martens Closed Cup Tester ASTM D93-79, D93-80 or Setaflash Closed Cup Tester D3278- 78, 1010,1020 ^(c) 40 CFR 261.21	Once	Annually
Reactivity	Not Reactive	Non-hazardous ^(b)	Section 7.3 ^(c)	Once	Annually
TCLP Parameters ^(f)				Once	Annually
Arsenic	<5.0 mg/l	Non-hazardous ^(b)	6010,7061 ^(c)	Once	Annually
Barium	<100.0 mg/l	Non-hazardous ^(b)	6010,7000,7010 ^(c)	Once	Annually
Benzene	<0.5 mg/l	Non-hazardous ^(b)	8021,8260 ^(c)	Once	Annually
Cadmium	<1.0 mg/l	Non-hazardous ^(b)	6010,7000,7010 ^(c)	Once	Annually
Carbon tetrachloride	<0.5 mg/l	Non-hazardous ^(b)	8021,8260 ^(c)	Once	Annually
Chlordane	<0.03 mg/l	Non-hazardous ^(b)	8081,8270 ^(c)	Once	Annually
Chlorobenzene	<100.0 mg/l	Non-hazardous ^(b)	8021,8270 ^(c)	Once	Annually
Chloroform	<6.0 mg/l	Non-hazardous ^(b)	8021,8260 ^(c)	Once	Annually
Chromium	<5.0 mg/l	Non-hazardous ^(b)	6010,7000,7010 ^(c)	Once	Annually
Chromium, trivalent and hexavalent	<5.0 mg/l	Leachate treatment ^(g)	7195,7197/6010, 7000, 7010 ^(c)	Once	Annually
Copper	<10.0 mg/l	Leachate treatment ^(g)	6010,7000,7010 ^(c)	Once	Annually
o-Cresol	68.0 mg/l ^(h)	Non-hazardous ^{(b)(o)}	8041,8270 ^(c)	Once	Annually
m-Cresol	68.0 mg/l ^(h)	Non-hazardous ^{(b)(o)}	8041,8270 ^(c)	Once	Annually
p-Cresol	68.0 mg/l ^(h)	Non-hazardous ^{(b)(o)}	8041,8270 ^(c)	Once	Annually
Cresol	68.0 mg/l ^(h)	Non-hazardous ^{(b)(o)}	8041,8270 ^(c)	Once	Annually
Cyanide	<2.0 mg/l	Leachate treatment ^(g)	9013/9010 ^(c)	Once	Annually
Cyanates	<2.0 mg/l	Leachate treatment ^(g)	9013/9014 ^(c)	Once	Annually
2,4-D	<1.0 mg/l	Non-hazardous ^{(b)(o)}	8151 ^(c)	Once	Annually
1,4-Dichlorobenzene	<7.5 mg/l	Non-hazardous ^(b)	8021, 8260 ^(c)	Once	Annually
1,2-Dichloroethane	<0.5 mg/l	Non-hazardous ^(b)	8021, 8260 ^(c)	Once	Annually
1,1-Dichloroethylene	<0.7 mg/l	Non-hazardous ^(b)	8021, 8260 ^(c)	Once	Annually
2,4-Dinitrotoluene	<0.13 mg/l	Non-hazardous ^(b)	8091,8270 ^(c)	Once	Annually
Endrin	<0.02 mg/l	Non-hazardous ^(b)	8081,8270 ^(c)	Once	Annually
Heptachlor (and its epoxide)	<0.008 mg/l	Non-hazardous ^(b)	8081,8270 ^(c)	Once	Annually
Hexachlorobenzene	<0.13 mg/l	Non-hazardous ^(b)	8121, 8081,8270 ^(c)	Once	Annually
Hexachlorobutadiene	<0.5 mg/l	Non-hazardous ^(b)	8121,8260, 8270 ^(c)	Once	Annually
Hexachloroethane	<3.0 mg/l	Non-hazardous ^(b)	8260,8270 ^(c)	Once	Annually
Iron	<6400 mg/l	Leachate treatment ^(g)	6010,7000, 7010 ^(c)	Once	Annually
Lead	<5.0 mg/l	Non-hazardous ^(b)	6010,7000,7010 ^(c)	Once	Annually
Lindane	<0.4 mg/l	Non-hazardous ^(b)	8081,8270 ^(c)	Once	Annually
Mercury	<0.2 mg/l	Non-hazardous ^(b)	7470,7471 ^(c)	Once	Annually
Methoxychlor	<5.0 mg/l	Non-hazardous ^{(b)(o)}	8081,8270 ^(c)	Once	Annually

Methyl ethyl ketone	<200.0 mg/l	Non-hazardous ^(b)	8015,8260 ^(c)	Once	Annually
Nickel	<5.0 mg/l	Typical properties ^(d)	6010,7000,7010 ^(c)	Once	Annually
Nitrobenzene	<2.0 mg/l	Non-hazardous ^(b)	8091,8270 ^(c)	Once	Annually
Pentachlorophenol	<40.0 mg/l	Non-hazardous ^{(b)(o)}	8041,8270 ^(c)	Once	Annually
Pyridine	< 5.0 mg/l ⁹	Non-hazardous ^(b)	8260,8270 ^(c)	Once	Annually
Selenium	<1.0 mg/l	Non-hazardous ^(b)	6010,7000,7010 ^(c)	Once	Annually
Silver	<5.0 mg/l	Non-hazardous ^(b)	6010,7000,7010 ^(c)	Once	Annually
Tetrachloroethylene	<0.7 mg/l	Non-hazardous ^(b)	8260 ^(c)	Once	Annually
Toxaphene	<0.5 mg/l	Non-hazardous ^(b)	8081,8270 ^(c)	Once	Annually
Trichloroethylene	<0.5 mg/l	Non-hazardous ^(b)	8260 ^(c)	Once	Annually
2,4,5-Trichlorophenol	<30.0 mg/l	Non-hazardous ^{(b)(o)}	8041,8270 ^(c)	Once	Annually
2,4,6-Trichlorophenol	<2.0 mg/l	Non-hazardous ^(b)	8041,8270 ^(c)	Once	Annually
2,4,5-TP (Silvex)	<1.0 mg/l	Non-hazardous ^(b)	8151 ^(c)	Once	Annually
Vinyl Chloride	<0.2 mg/l	Non-hazardous ^(b)	8021,8260 ^(c)	Once	Annually
Zinc	<17.5 mg/l	Leachate treatment ^(g)	6010,7000,7010 ^(c)	Once	Annually
Phenolics	<130 mg/l	Leachate treatment ^(g)	8041 ^(c)	Once	Annually
Free Liquids	<40%	Typical properties ^(d)	9095 ^(c)	Once	Annually
Polychlorinated Biphenyls (PCBs)	<40 mg/kg	Typical properties ^(d)	8082 ^(c)	Once	Annually
Water Leaching Procedure ^(j) Test Parameters					
COD	<700 mg/l	Typical properties ^(d)	410.1 ^(c)	Once	Annually
Total solids	<5000 mg/l	Typical properties ^(d)	160.3 ^(k)	Once	Annually
Oil and Grease or Petroleum Hydrocarbons	<50 mg/l	Typical properties ^{(d)(o)}	8015 ^(c) ,1664 ^(m)	Once	Annually
Ammonia Nitrogen	<50 mg/l	Typical properties ^(d)	350.2 ^(k)	Once	Annually
Total Solids	>10%, Dewatered sludges	Typical properties ^(d)	209F ^(a) ASTM D2216	Once	Annually
Total Solids, continued	>50%, Treatment Plant Filter Cakes >60%, Other Wastes	Typical Properties	209F ^(a) ASTM D2216		
Total Volatile Solids	<60%	Typical properties ^(d)	209F ^(a)	Once	Annually
Total Oil and Grease or Total Petroleum Hydrocarbons (as Gasoline Range Organics (GRO)/Diesel Range Organics (DRO))	<120,000 mg/kg (unless otherwise approved by PADEP on a waste specific basis)	Typical properties ^(d)	8015, 8260/8270 ^(c) or 1664 ^(m)	Once	Annually

Notes:

- The method list, or another method approved by the PADEP will be used when performing the analysis.
- Non-hazardous according to §261.20 through 261.24 of Title 40 of the Code of Federal Regulations.
- SW-846, Test Methods for Evaluating Solid Waste, USEPA, November 1986, or latest approved revision.
- Typical properties of residual waste were determined from a review of laboratory data.

- e. EPA withdrew the specific test methods for reactivity previously specified in SW-846 Chapter 7.3 in an action in 1998. Pursuant to current USEPA guidance, reactivity must be determined by evaluating the waste for the specific properties identified in 40 CFR 261.23.
- f. Toxicity Characteristic Leaching Procedure as described in Method 1311, USEPA SW-846.
- g. Leachate treatment limits are based on the maximum daily discharge limit specified in the PA Waste, LLC NPDES Permit for the landfill's leachate treatment plant (see Appendix A) multiplied by Dilution/Attenuation Factor of 100.
- h. If o-, m- and p-cresol concentrations cannot be differentiated, the total cresol concentration is used. The cresol acceptance criteria is <68.0 mg/l.
- i. If quantitation limit is greater than acceptance criteria, use quantitation limit.
- j. ASTM Method D3987-85.
- k. EPA 600/4-79-020, Methods for Chemical Analysis of Water and Wastes, USEPA, March 1979.
- l. American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 1985, Standard Methods for the Examination of Water and Wastewater, A.E. Greenbert, R.R. Trussel, L.S. Clescen, and M.H. Franson, eds., 16th ed., American Public Health Association, Washington, D.C.
- m. EPA 40 C.F.R. Part 136
- n. All wastes are subject to initial characterization analysis. Characterization Analysis is reported annually unless more frequent characterization is required as specified in Section 2.0 and Figure 1 of the Form R1.
- o. Acceptance criteria limit provided by PADEP based on agency permitting history.

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

Residual Waste Category	Parameter	Acceptance Criteria
Combustion Residues (000)	pH Flash Point/Ignitability Reactivity Free Liquids Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	>2 and <12.5 >60°C/Not Ignitable* Not Reactive* Pass Paint Filter Test See Note 2

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

Residual Waste Category	Parameter	Acceptance Criteria
Metallurgical Process Residues (100)	pH	>2 and <12.5
	Flash Point/Ignitability	>60°C/Not Ignitable*
	Reactivity	Not Reactive*
	Reactive Cyanide	
	Free Liquids	Pass Paint Filter Test
	Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	See Note 2

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

Residual Waste Category	Parameter	Acceptance Criteria
Sludges, Scales (200)	pH	>2 and <12.5
	Flash Point/Ignitability	>60°C/Not Ignitable*
	Reactivity	Not Reactive*
	Free Liquids	Pass Paint Filter Test
	Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	See Note 2
	Total Organic Halogens	-
	Total Petroleum Hydrocarbons	<50 mg/l

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

Residual Waste Category	Parameter	Acceptance Criteria
Chemical Wastes (300)	pH	>2 and <12.5
	Flash Point/Ignitability	>60°C/Not Ignitable*
	Reactivity	Not Reactive*
	Free Liquids	Pass Paint Filter Test
	Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	See Note 2
	Total Organic Halogens	-
	Toxicity Characteristic Leachate Procedure Organics ⁽³⁾	See Note 3
Generic Wastes (400)	pH	>2 and <12.5
	Flash Point/Ignitability	>60°C/Not Ignitable*
	Reactivity	Not Reactive*
	Free Liquids	<40% and Pass Paint Filter Test
	Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	See Note 2

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

Residual Waste Category	Parameter	Acceptance Criteria
Special Handling Residues (500)	pH Flash Point/Ignitability Reactivity Free Liquids Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	>2 and <12.5 >60°C/Not Ignitable* Not Reactive* Pass Paint Filter Test See Note 2

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

Residual Waste Category	Parameter	Acceptance Criteria
Industrial Equipment Scrap (700)	pH	>2 and <12.5
	Flash Point/Ignitability	>60°C/Not Ignitable*
	Reactivity	Not Reactive*
	Free Liquids	Pass Paint Filter Test
	Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	See Note 2
Noncoal Mining Wastes (800)	pH	>2 and <12.5
	Flash Point/Ignitability	>60°C/Not Ignitable*
	Reactivity	Not Reactive*
	Free Liquids	Pass Paint Filter Test
	Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	See Note 2
	Toxicity Characteristic Leachate Procedure Organics ⁽³⁾	See Note 3

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

Residual Waste Category	Parameter	Acceptance Criteria
Miscellaneous (900)	pH	>2 and <12.5
	Flash Point/Ignitability	>60°C/Not Ignitable*
	Reactivity	Not Reactive*
	Free Liquids	Pass Paint Filter Test
	Toxicity Characteristic Leaching Procedure Metals ⁽²⁾	See Note 2
	Toxicity Characteristic Leachate Procedure Organics ⁽³⁾	See Note 3

Footnotes:

***As defined pursuant to 40 CFR Part 261 Subpart C**

Table 2A
Baseline Characterization Requirements⁽¹⁾
PA Waste, LLC
Camp Hope Run Landfill

(1) Analyses must be performed for all previously unapproved waste types and for all approved wastes from a previously unapproved parameters.

(2)	Arsenic	<5.0 mg/l	Lead	<5.0mg/l	Copper	<10.0 mg/l
	Barium	<100.0 mg/l	Mercury	<0.2 mg/l	Zinc	<17.5 mg/l
	Cadmium	<1.0 mg/l	Selenium	<1.0 mg/l	Nickel	<5.0 mg/l
	Chromium	<5.0 mg/l	Silver	<5.0 mg/l		

(3)	Endrin	<0.02 mg/l	0-Cresol	<68.0 mg/l	Hexachlorobutadiene	<0.5 mg/l
	Lindane	<0.4 mg/l	m-Cresol	<68.0 mg/l	Hexachloroethane	<3.0 mg/l
	Methoxychlor	<5.0 mg/l	p-Cresol	<68.0 mg/l	Methyl Ethyl Ketone	<200.0 mg/l
	Toxaphene	<0.5 mg/l	Cresol	<68.0 mg/l	Nitrobenzene	<2.0 mg/l
	2,4-D	<1.0 mg/l	1,4 Dichlorobenzene	<7.5 mg/l	Pentachlorophenol	<40.0 mg/l
	2,4,5-TP	<1.0 mg/l	1,2 Dichloroethane	<0.5 mg/l	Pyridine	<5.0 mg/l
	Benzene	<0.5 mg/l	1,1 Dichloroethane	<0.7 mg/l	Tetrachloroethane	<0.7 mg/l
	Carbon Tetrachloride	<0.5 mg/l	2,4 Dinitrotoluene	<0.13 mg/l	Trichloroethene	<0.5 mg/l
	Chlordane	<0.03 mg/l	Heptachlor		2,4,5-Trichlorophenol	<30.0 mg/l
	Chlorobenzene	<100.0 mg/l	(and its expoxide)	<0.008 mg/l	2,4,6-Trichlorophenol	<2.0 mg/l
	Chloroform	<6.0 mg/l	Hexachlorobenzene	<0.13 mg/l	Vinyl Chloride	<0.2 mg/l