

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES



MISSOURI HAZARDOUS WASTE MANAGEMENT FACILITY  
PART I PERMIT

PERMIT NUMBER: MOD059200089

**\*This redline version of the Class 3 Permit modification approved Dec. 5, 2018, shows what conditions were modified. Deletions are shown as red strikeouts and additions are in blue and underlined.**

**PERMITTEE**

Owner:

Buick Resource Recycling Facility, LLC  
1801 Park 270 Drive  
St. Louis, MO 63146

Operator:

The Doe Run Company  
~~HC1, Box 1395~~ 18594 Highway KK  
Boss, MO 65440

**FACILITY LOCATION**

Buick Resource Recycling Facility  
~~KK and Highway 32~~ 18594 Highway KK  
Boss, MO 65440  
Iron County  
North Latitude – 37°38'08"  
West Longitude – 91°07'55"

**FACILITY DESCRIPTION**

The Buick Resource Recycling Facility receives lead-acid batteries and other lead-bearing wastes. These wastes are recycled to recover the lead and other trace metals, the sulfuric acid, and polyethylene plastic. This facility is a secondary lead smelting operation.

**PERMITTED ACTIVITIES**

The Buick Resource Recycling Facility is permitted to treat hazardous waste in miscellaneous units. The facility is also permitted to store hazardous wastes in containers and containment buildings and to dispose of treated hazardous waste generated by Doe Run at the Buick facility in an on-site landfill. The Permit also contains corrective action conditions to address releases to the environment from Solid Waste Management Units and/or Areas of Concern as necessary and appropriate.

EFFECTIVE DATES OF PERMIT: March 15, 2005 to March 15, 2015  
| [\\*The permit has been continued in accordance with 40 CFR 270.51.](#)

| December 5, 2018 [\[Original signed by Carey Bridges\]](#)  
| Modified Date [~~Daniel R. Schuette~~Cary Bridges, Deputy](#) Director  
DIVISION OF ENVIRONMENTAL QUALITY

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## **INTRODUCTION**

After public notice in accordance with 10 CSR 25-8.124 and 40 CFR Part 124 and review of The Doe Run Company's Hazardous Waste Facility Permit Application (hereafter referred to as the Application), the Missouri Department of Natural Resources (hereafter referred to as the Department) has determined that the application substantially conforms to the provisions of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (commonly known as RCRA) and regulations promulgated thereunder by the United States Environmental Protection Agency (hereafter referred to as USEPA) (codified and to be codified in Title 40 of the Code of Federal Regulations) and the Missouri Hazardous Waste Management Law (and all standards, rules, and regulations adopted under this act). In accordance with Section 260.375.13, RSMo, and the Solid Waste Disposal Act, the Department hereby approves the application and issues Permit Number MOD059200089 to Buick Resource Recycling Facility, LLC, and The Doe Run Company (hereafter referred to as the Permittee) for the construction and operation of the hazardous waste facility as set forth in the Application and this Permit. This Permit also addresses corrective action requirements for solid waste management units and the requirements of the Hazardous and Solid Waste Amendments of 1984 (commonly known as HSWA) as administered and enforced by the Department. Applicable regulations are found in 40 CFR Parts 124, 260 through 264, 266, 268, and 270, as specified in this Permit. All portions of this Permit, referred to as Part I, are issued under state authority, with the exception of Part II which is issued by USEPA to address regulatory requirements of the HSWA for which the state is not yet authorized. Part I of this Permit shall remain in effect even if Part II is terminated or has expired.

The permit application that was submitted by the Permittee June 4, 2001, the revised tables for the Hydrogeologic Characterization Report (Part B Application G-1 tables) and revised closure cost estimate (Part B Application K-1) submitted May 6, 2002, the habitual violator disclosure submitted October 2002, the miscellaneous unit revision received October 18, 2004, the November 2005 permit modification application and associated revision dated July 10, 2006, the August 2006 Construction Plans and Specifications with revisions dated November 2, 2006, the August 2006 Construction Quality Assurance Plan, the October 2006 revised Sampling and Analysis Plan (SAP), and the revised Section 6.3 for the Slag Treatment Unit submitted July 2007 will hereafter be referred to as the "approved permit application." The approved permit application, along with all of the additional documents to be submitted under the Schedule of Compliance is defined as the "consolidated permit application." The Department is not requiring an updated consolidated permit application as part of the permit modification. The Permittee shall maintain all the documents outlined above with the original consolidated permit application.

All permit application information shall be available to the public unless nondisclosure is requested in writing as set forth in Section 260.430, RSMo and 10 CSR 25-7.270(2)(B)2. The

Permit and accompanying material will be available for review by the public at the Department's central office in Jefferson City, Missouri, and the USEPA, Region VII office in ~~Kansas-City Lenexa, Kansas, and the Ozark Regional Public Library in Viburnum, Missouri.~~

The Permittee's hazardous waste facility is located at KK and Highway 32, Boss, Missouri. The Permittee is permitted to operate the container storage facilities, miscellaneous treatment units, and containment buildings as specified in this Permit. The permit modification allows for the construction and operation of an on-site hazardous waste landfill.

Construction and operation of this hazardous waste facility and corrective action shall be in accordance with the provisions of this Permit, the Missouri Hazardous Waste Management Law (Sections 260.350 to 260.434, RSMo), the rules and regulations promulgated thereunder [Code of State Regulations, Title 10, Division 25 (10 CSR 25)] as effective on the date of this Permit, all the final engineering plans, petitions, specifications, and operating procedures which were submitted to the Department during the permit application review process and which are included in the final version of the permit application, which is hereby approved by the Department, and any other conditions, changes, or additions to the plans, specifications, and procedures as specified in this Permit. The consolidated permit application, which includes engineering plans, specifications and operating procedures, is therefore incorporated by this reference into the conditions of this Permit. All conditions specified in this Permit supersede any conflicting information in the consolidated permit application. Where conflicts arise between documents, the latest revision shall be effective.

Any inaccuracies found in information submitted may be grounds for the termination, revocation and re-issuance, or modification of this Permit in accordance with 40 CFR Part 270 Subpart D, incorporated by reference in 10 CSR 25-7.270(1) and modified in 10 CSR 25-7.270(2)(D), and for potential enforcement action. The Permittee shall inform the Department of any deviation from, or changes in, the information in the application, which would affect the Permittee's ability to comply with the applicable regulations or Permit conditions.

When the Department receives any information (such as inspection results, information from the Permittee, or requests from the Permittee) it may decide whether cause exists to modify, revoke and reissue, or terminate a facility's Permit. All such changes to the Permit will be in accordance with 10 CSR 25-7.270(2)(D), 10 CSR 25-8.124, and 40 CFR Part 270 Subpart D, as incorporated by reference in 10 CSR 25-7.270(1).

The Permittee shall comply with all applicable environmental laws and regulations enforced by the Department. These environmental requirements are administered by the Air Pollution Control Program, the Hazardous Waste Program, the Land Reclamation Program, the Solid Waste Management Program, and the Water Protection Program. Failure to comply with these

environmental laws may, in certain circumstances, result in the suspension or revocation of this Permit and may subject the Permit holder to civil and criminal liability.

This Permit for operational, closure, and corrective action activities is issued only to the Permittee named above. This Permit is issued for a period of ten years and expires at midnight on March 15, 2015. This Permit is subject to review and modification by the Department in accordance with Section 260.395.12, RSMo.

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

All citations to federal regulations throughout this Permit are for the sake of convenient reference. The federal regulations are adopted by reference in 10 CSR 25. In the instances where state regulations are more stringent, the appropriate state reference is given and shall apply.

Any appeal of the issuance or denial of the Permit or specific permit conditions based on state authority shall be filed in accordance with Sections 260.395.11 and 621.250, RSMo. The written petition requesting the appeal must be filed with the Administrative Hearing Commission within thirty (30) days after the Permit is mailed or delivered, whichever is earlier. If the petition is sent by registered mail or certified mail, it will be considered filed on the date it is mailed. If it is sent by any method other than registered mail or certified mail, it will be considered filed on the date it is received by the Administrative Hearing Commission.

40 CFR 264.101(a), as incorporated by reference in 10 CSR 25-7.264(1), requires all owners or operators of facilities seeking a permit for the treatment, storage, or disposal of hazardous waste to institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit, regardless of the time at which waste was placed in such unit.

40 CFR 264.101(b), as incorporated by reference in 10 CSR 25-7.264(1), requires that permits issued under the Hazardous Waste Management Law, contain a schedule of compliance for corrective action (where corrective action cannot be completed prior to permit issuance) and assurances of financial responsibility for completing such corrective action.

40 CFR 264.101(c), as incorporated by reference in 10 CSR 25-7.264(1), requires that corrective action be taken by the facility owner or operator beyond the facility property boundary, where necessary to protect human health and the environment, unless the owner or operator demonstrates that, despite the owner/operator's best efforts, the owner or operator was unable to obtain the necessary permission to undertake such action. Further, 40 CFR 264.101(c), as

incorporated by reference in 10 CSR 25-7.264(1), stipulates that the owner/operator is not relieved of any responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. In addition, assurances of financial responsibility for completing such corrective action must be provided.

40 CFR 270.32(b)(2), as incorporated by reference in 10 CSR 25-7.270(1), requires that each permit issued under that section contain terms and conditions as the Department determines necessary to protect human health and the environment.

On July 6, 1999, Missouri received final authorization for revisions to its hazardous waste management program, including the corrective action portion of the HSWA Codification Rule (July 15, 1985, 50 FR 28702) which had been previously adopted by the state. Thus, the corrective action requirements implemented by the state in lieu of the USEPA are incorporated into Part I of this Permit and are under state authority. Authority for other HSWA requirements for which the state is not authorized is retained by the USEPA and appears in Part II of this Permit.



## DEFINITIONS

For purposes of this Permit, terms used herein shall have the same meaning as those in RCRA and 40 CFR Parts 124, 260, 261, 264, 266, 268, and 270, and 10 CSR 25, unless this Permit specifically provides otherwise. Where terms are not defined in RCRA, the regulations, the permit, or the USEPA guidance or publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

“Area of Concern (AOC)” means any area where an actual or potential release of hazardous waste or hazardous constituents, which is not from a solid waste management unit, has occurred or is occurring and is determined by the Department to pose a current or potential threat to human health or the environment. Investigation and/or remediation of AOCs may be required pursuant to Section 260.395, RSMo, and 40 CFR 270.32(b)(2), as incorporated by reference in 10 CSR 25-7.270(1).

“Director” means the Director of the Missouri Department of Natural Resources.

“Facility” means:

“All contiguous land and structures, other appurtenances, and improvements on the land used for treating, storing, or disposing hazardous waste.”

“All contiguous property under the control of the owner/operator, for the purpose of implementing corrective action under 40 CFR 264.101, as incorporated by reference in 10 CSR 25-7.264(1) and as specified in Corrective Action Permit Conditions I. through XIII. of this Permit.”

“Hazardous constituent” means any chemical compound listed in 40 CFR Part 261, Appendix VIII. as incorporated in 10 CSR 25-4.261(1).

“Hazardous waste” means any waste, or combination of wastes as defined by or listed in 10 CSR 25-4, which because of its quantity, concentration, physical, chemical, or infectious characteristics may cause or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; or which may pose a threat to the health of humans or other living organisms.

“Paved roadway surface” means a surface paved with asphalt, concrete, concrete pavers, brick, or other similar materials; but excluding gravel, crushed rock, slag, and other similar materials.

“Release” means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).

“Solid Waste Management Unit (SWMU)” means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released.

“Stabilization” means actions to control or abate threats to human health and/or the environment from releases at RCRA facilities and/or to prevent or minimize the further spread of contamination while long-term remedies are pursued.

## **SCHEDULE OF COMPLIANCE**

- I. Within sixty (60) calendar days after the effective date of this Permit, the Permittee shall:
  - A. Submit to the Department a certification by the Permittee that the Permittee has read the Permit and all modifications in their entirety and understands all permit conditions contained herein.
  - B. Submit to the Department a check or money order payable to the State of Missouri for any outstanding engineering review costs.
  - C. Submit to the Department for approval a revised Sampling and Analysis Plan (SAP) in accordance with Special Permit Condition IX.D. to incorporate all groundwater modifications outlined in this final permit modification for the SSA Landfill. The Permittee shall not utilize the new landfill until the Department approves the revised SAP in writing.
  - D. Submit to the Department for approval a SAP that includes an interim groundwater monitoring plan for sitewide corrective action as outlined in Corrective Action Condition IV.
  - E. Submit to the Department for approval a revised/updated Part A. The revised/updated Part A shall include all the permitted units at the facility. The revised Part A submittal shall include a diagram of the facility clearly outlining where each permitted unit is located.
  - F. Submit to the Department a certification by an independent professional engineer registered in Missouri as outlined in Special Permit Condition III.C.9., certifying that all containment buildings meet the design and operating conditions outlined in this Permit or a schedule to implement all upgrades. The schedule shall not exceed 365 days after final permit modification. After all upgrades are completed, the Permittee shall submit the certification as outlined in Special Permit Condition III.C.9.
  - G. Submit to the Department for approval a sampling plan to determine whether the blast furnace slag, prior to granulating, is a hazardous waste. The plan shall also include sampling of the water and sludge/sediment in each of the two lamella clarifier overflow concrete tanks to determine if they are characteristic. Doe Run shall implement the plan within sixty (60) days of

approval. An investigation report shall be submitted within sixty (60) days of completion of the sampling activities. Based upon review of the investigation report, the Department may require Doe Run to submit a modification to this Permit.

- II. The Permittee shall comply, as necessary, with all corrective action and contingent corrective action requirements of this Permit as specified in the Corrective Action Permit Conditions section and as summarized in Table 3.
- III. The Permittee shall initiate installation of a sealant over the leaking portion of the floor in the Battery Bunker and Paste Storage Area in May 2008, as outlined in the November 20, 2007, Doe Run submittal. The Permittee shall then determine if liquid is still being detected coming from the leak detection system and report to the Department within sixty (60) days. If a leak is no longer being detected, the report shall include an independent professional engineer's certification per Special Permit Condition III.C.10. If a leak is still detected from the Battery Bunker and Paste Storage Area leak detection system, the letter shall notify the Department of the present situation and the Permittee shall comply with Schedule of Compliance Item IV.
- IV. This item is only in effect if required by Schedule of Compliance Item III. The Permittee shall submit a schedule and plan within sixty (60) days of the notification letter to the Department that a leak is still being detected per Schedule of Compliance Item III. The schedule and plan shall detail additional repairs, additional bricking of areas, or other construction to bring the battery bunker containment building into compliance with 40 CFR Part 264 Subpart DD standards. The Permittee shall implement the plan and then determine if liquid is still being detected coming from the leak detection system and report to the Department within sixty (60) days of completion of the plan. If a leak is no longer being detected after completion of this plan, the report shall include the professional engineer's certification per Special Permit Condition III.C.10. If a leak is still detected from the Battery Bunker and Paste Storage Area leak detection system after completion of the plan, the letter shall notify the Department of the present situation and the Permittee shall submit a modification request for this Permit within sixty (60) days which shall detail additional changes necessary to bring the containment building into compliance; this modification request shall include the proposed establishment of an action leakage rate (a leakage rate below which suspension of activities for repairs to the primary barrier is not mandated) for the containment building.

- V. Within 150 days of the date of this Permit modification, the Permittee shall submit design drawings and specifications for the Slag Storage Area Staging Bins as a permitted containment building for approval. The design drawings and specifications shall be certified by an independent professional engineer registered in Missouri. The submittal shall also include a closure plan and associated closure cost for the new containment building. Financial assurance for closure of the new containment building shall be updated within sixty (60) days of approval of the closure cost estimate. The Permittee shall construct the area according to the approved specifications and schedule. The Permittee shall submit “as built” drawings of the area within sixty (60) days after construction is complete.
  
- VI. Prior to receipt of waste into the Slag Storage Area Landfill, the Permittee shall:
  - A. Submit to the Department for review draft updates to the financial assurance instrument to reflect the increased closure and post-closure cost estimates in Section L of the July 10, 2006, revised permit modification.
  
  - B. After the Department’s review of the draft update, the Permittee shall execute or otherwise finalize the update. The update must be in a form identical to the financial assurance documents reviewed by the Department.
  
  - C. Permittee shall submit all original executed and/or otherwise finalized financial assurance instruments or other documents to the Department. The Permittee shall submit original executed or otherwise finalized instruments or documents. Facsimiles or photocopies are not acceptable.
  
  - D. Demonstrate the increased financial responsibility for bodily injury and property damage to third parties for non-sudden accidental occurrences as required by Special Permit Condition XI.
  
  - E. File with the local County Recorder of Deeds an “Agreement for Easement, Notice and Covenant Running with Land” in accordance with Special Permit Condition VI.C.14.
  
- VII. Within fifteen (15) days prior to receipt of waste into the landfill, the Permittee shall notify the department in writing in accordance with Special Permit Condition VI.C.13.

## SUBMITTAL OF REQUIRED INFORMATION

- I. The Permittee shall submit three copies of all reports, documents, or plans/specifications required under the terms of this Permit to:

Chief, Permits Section  
Missouri Department of Natural Resources  
Hazardous Waste Program  
~~1730 East Elm St. (lower level)~~  
P.O. Box 176  
Jefferson City, MO 65102-0176

- II. The Permittee shall submit two copies of all reports, documents, or plans/specifications required under the terms of this Permit to:

Chief, ~~RCRA Corrective Action~~Waste Remediation and ~~Permits~~Permitting Branch  
U.S. Environmental Protection Agency, Region VII  
Air and Waste Management Division  
~~901 North Fifth St.~~11201 Renner Boulevard  
~~Kansas City~~Lenexa, KS ~~66101~~66219

### **STANDARD PERMIT CONDITION**

- I. The Permittee shall comply with the requirements set forth in the Missouri Hazardous Waste Management Law (and all standards, rules, and regulations adopted under this Law), Section 260.350, et seq., RSMo, 40 CFR Part 264 Subpart H, 40 CFR 270.30, 40 CFR 270.40, 40 CFR 270.42, and 40 CFR 270.51, as incorporated and modified in 10 CSR 25-7 and 10 CSR 25-8.

### **GENERAL PERMIT CONDITIONS**

- I. The Permittee shall comply with the requirements set forth in 40 CFR Part 264 Subpart B, 40 CFR Part 264 Subpart C, 40 CFR Part 264 Subpart D, 40 CFR Part 264 Subpart E, 40 CFR Part 264 Subpart H, 40 CFR Part 268, and 40 CFR Part 270, as incorporated and modified in 10 CSR 25-7 and 10 CSR 25-8.

- II. Notification of an Emergency Situation [Chapter 260.505.4, RSMo]

The Permittee shall, at the earliest practical moment upon discovery of an emergency involving the hazardous waste under the Permittee's control, notify the Department's emergency response hotline at (573) 634-2436 and the National Response Center at 1-800-424-8802.

## **SPECIAL PERMIT CONDITIONS**

The Department has established the following additional Permit conditions for the Permittee's hazardous waste facility.

### **I. Storage in Containers [40 CFR Part 264 Subpart I]**

Two container storage areas are permitted, the East Parking Lot Storage Area and the Palletized Storage Area. These units are located as shown on figure F-1 and are subject to the requirements of 40 CFR Part 264 Subpart I.

#### **A. Waste Identification**

The Permittee shall store in containers only the hazardous wastes identified below. All stored wastes are subject to the terms of this Permit.

- |      |   |
|------|---|
| D004 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains an arsenic concentration greater than five milligrams per liter |
| D005 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a barium concentration greater than 100 milligrams per liter    |
| D006 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a cadmium concentration greater than one milligram per liter    |
| D007 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a chromium concentration greater than five milligrams per liter |
| D008 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a lead concentration greater than five milligrams per liter     |
| D010 | A solid waste that exhibits the characteristic of toxicity that if using the test methods described at 40 CFR 261.24, contains a selenium concentration greater than one milligram per liter    |



D011 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a silver concentration greater than five milligrams per liter

K069\* Emissions control dust from secondary lead smelting

\*In accordance with 40 CFR 261.31, K069's listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further action is taken.

B. Waste Quantities

The Permittee shall store only the following quantities of hazardous wastes in containers according to this Permit:

1. Storage of hazardous waste in the East Parking Lot Storage Area shall not exceed the lesser of 1304 fifty-five gallon drum equivalents or 9588 cubic feet. The Permittee shall not store any wastes that contain free liquids in this area.
2. Storage of hazardous waste in the Palletized Storage Area shall not exceed the lesser of 3260 fifty-five gallon drum equivalents or 23,969 cubic feet. The Permittee shall not store hazardous waste that exhibits greater than three percent free liquids, by volume, in this area.

C. Condition of Containers [40 CFR 264.171]

1. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from the container to a container that is in good condition or manage the waste in some other way that complies with the conditions of this Permit, such as over-packing.
2. During the entire on-site storage period, containers storing hazardous wastes shall be labeled and marked in accordance with the applicable, currently-effective U.S. Department of Transportation (DOT) regulations regarding hazardous materials, 49 CFR Part 172. [10 CSR 25-7.264(2)(I)2.]

D. Compatibility of Waste with Containers [40 CFR 264.172]

1. The Permittee shall use a container that is made of, or lined with, materials which will not react with and are otherwise compatible with the hazardous waste to be stored so that the ability of the container to contain the waste is not impaired.
2. Only DOT approved containers shall be used for storage of hazardous waste on site.

E. Management of Containers [40 CFR 264.173]

1. A container holding hazardous waste shall always be closed during storage, except when it is necessary to add or remove waste. A container holding hazardous waste shall not be opened, handled, or stored in a manner that may rupture the container or cause it to leak or spill.
2. The Permittee shall store containers in a manner that ensures physical stability and allows for visual inspection of each container and each container's label, except for visual inspection of containers not containing free liquids where container size prohibits the inspection of center containers when palletized, provided the outermost containers are clearly labeled as to the number of containers on the pallet.

F. Inspections [40 CFR 264.174]

At least weekly, the Permittee shall inspect areas where containers are stored in accordance with the approved permit application checklists. In the case of containers that may have free liquids, the inspection shall include looking for leaking containers and for deterioration of containers and the containment system caused by corrosion or other factors.

G. Containment [40 CFR 264.175]

The Permittee shall design and operate containment systems for the Palletized Storage Area as follows:

1. A base shall underlie the containers, which is free of cracks or gaps and is sufficiently impervious to contain leaks, spills, and accumulated precipitation until the collected material is detected and removed.
2. The base shall be sloped or the containment system shall be otherwise designed and operated to drain and remove liquids resulting from leaks, spills or precipitation unless the containers are elevated or are otherwise protected from contact with accumulated liquids.
3. Run-on into the containment system must be prevented unless the collection system has sufficient excess capacity to contain any run-on that might enter the system.
4. Spilled or leaked waste shall be removed from the sump or collection area in as timely a manner as is necessary to prevent overflow of the collection system.

H. Staging [10 CSR 25-7.264(2)(A)3.]

A container holding hazardous waste shall not be staged stored or managed in an area not addressed by this Permit for a period that exceeds 24 hours.

I. Special Requirements for Incompatible Waste [40 CFR 264.177]

1. The Permittee shall not place incompatible wastes or materials in the same container unless such action is in compliance with the requirements of 40 CFR 264.17(b).
2. The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material.
3. The Permittee shall separate by device (i.e., a dike or other physical means) containers of incompatible waste or materials. No incompatible waste or materials may be stored together in the storage areas without providing separation sufficient to prevent the mixing of any spilled materials that may be incompatible.

J. Closure [10 CSR 25-7.264(2)(G)]

At closure, the Permittee shall remove all hazardous waste and hazardous waste residues from the container storage areas and containment systems and close in accordance with the Closure Plan in the approved permit application for the hazardous waste management facility. If the Permittee is unable to close according to the Closure Plan, then the Permittee must submit a permit modification to the Department in accordance with 40 CFR 270.42.

II. Miscellaneous Units [40 CFR Part 264 Subpart X]

Six miscellaneous units are permitted:

- the one drum shredder unit located adjacent to the existing opening in the Battery Bunker and Paste Storage Area containment building,
- two screens for physical separation: one operates inside the Covered Material Storage Bins #14 or #15, and the other operates inside the Blast Furnace Feed Storage Building,
- the soda slag treatment (grinding and sizing) unit located in the Reverberatory Furnace Feed Storage Bunker,
- the battery shredder in the Battery Bunker and Paste Storage Area containment building, and
- the slag treatment unit.

These units are located as shown on figure F-1 and are subject to the requirements of 40 CFR Part 264 Subpart X.

A. Waste Identification [40 CFR 264.601]

The Permittee shall treat only the hazardous wastes identified below. Wastes managed in the drum shredder unit shall include dry batteries but shall not include any containers with free liquids. Wastes managed in the shredder unit shall only be received and managed in: steel drums, fiber drums, small metal cans and pails, gaylord containers, and sling sacks.

- D004 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains an arsenic concentration greater than five milligrams per liter
- D005 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a barium concentration greater than 100 milligrams per liter
- D006 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a cadmium concentration greater than one milligram per liter
- D007 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a chromium concentration greater than five milligrams per liter
- D008 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a lead concentration greater than five milligrams per liter
- D010 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a selenium concentration greater than one milligram per liter
- D011 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a silver concentration greater than five milligrams per liter
- K069\* Emissions control dust from secondary lead smelting

\*In accordance with 40 CFR 261.31, K069's listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further action is taken.

B. Waste Quantities [40 CFR 264.601]

The Permittee shall treat only the following quantities of hazardous wastes in miscellaneous units according to this Permit:

1. Treatment of hazardous waste in the drum shredder unit shall not exceed 240 tons of material per day.
  2. Treatment of hazardous waste in the battery shredder unit shall not exceed 2400 tons of material per day.
  3. Treatment of hazardous waste in the slag treatment unit shall not exceed 250 tons of material per day.
- C. Operating Requirements [40 CFR 264.601 and 10 CSR 25-7.264(2)(X)1.]
1. The Permittee shall not place hazardous waste or treatment reagents in the treatments units if they could cause any component of that treatment unit to rupture, leak or otherwise fail.
  2. The Permittee shall ensure operation of all automatic equipment that prevents spills, leaks, run-off from, or overflows from a treatment device or containment system.
  3. The Permittee shall use only the mechanical treatment devices that are specified in the approved permit application for treatment of hazardous waste.
  4. The Permittee shall operate all miscellaneous unit equipment only in accordance with the manufacturer's applicable operating manuals and as described in the approved application.
  5. Materials to be used for feed into the drum shredder unit shall be retrieved by a forklift equipped with material handling attachments capable of safely transporting the container. The feed rate shall be limited to an amount that does not cause a shredder to continually reverse the cutters.
  6. At all times the shredder unit is operating, the air emissions control equipment for the shredder shall be operating and fully functional. The equipment shall be capable of controlling and eliminating any fugitive dust emissions resulting from the shredder unit.

7. The equipment and area that are used in the operation of the shredder unit and the battery shredder unit shall be cleaned daily, after operations are completed.
  8. The shredder unit shall be cleared of hazardous wastes by processing at least the volume of two 55-gallon drums of non-hazardous lead bearing materials or scrap metal and managing these materials as a hazardous waste to prevent cross-contamination of non-hazardous wastes processed in these units. This processing shall be documented in the facility operating record per Special Permit Condition II.F.7.
  9. Soda slag and other hazardous wastes placed into the slag treatment unit shall be placed directly into the unit with no outside storage of these materials until after processing.
  10. Any grinding or sizing of soda slag for treatment in the slag treatment unit shall take place at the place where the slag is generated and within a containment building. This activity shall be viewed as part of the generation of the slag material.
- D. Response to Leaks or Spills [40 CFR 264.601 and 40 CFR 264.196]
1. In the event of a leak or a spill from the treatment system, or from a secondary containment system, or if a system becomes unfit for continued use, the Permittee shall remove the system from service immediately and complete the following actions:
    - a. Stop the flow of hazardous waste into the system, remove existing waste, and inspect the system to determine the cause of the release.
    - b. Remove waste from the system within twenty-four (24) hours of the detection of the leak to prevent further release and to allow inspection and repair of the system. If the Permittee finds that it will be impossible or impractical to meet this time period, the Permittee shall notify the Director and demonstrate that the longer time period is required.

If the collected material is a hazardous waste, it must be managed in accordance with all applicable requirements of

40 CFR Parts 262, 263, 264, 266, 268, and 270. The Permittee shall note that if the collected material is discharged through a point source to public waters or to a publicly owned treatment works, it is subject to requirements of the Clean Water Act.

- c. The Permittee shall immediately conduct a visual inspection of all releases to the environment and based on that inspection:
    - 1) prevent further migration of the leak or spill to soils or surface water; 2) remove and properly dispose of any visible contamination of the soil or surface water; and 3) determine the extent of contamination to the soil or surface water.
2. In the event of equipment failure:
    - a. For a release caused by a spill that has not damaged the integrity of the treatment system, the Permittee shall remove the released waste and make any necessary repairs to fully restore the integrity of the system before returning the treatment system to service.
    - b. For a release caused by a leak from a treatment unit to the secondary containment system or containment building, the Permittee shall repair the treatment unit prior to returning it to service. The material released shall be thoroughly removed from the affected area.
    - c. If the Permittee replaces a component of the treatment system to eliminate the leak, that component must satisfy the requirements for new tank systems or components in 40 CFR 264.192 and 40 CFR 264.193.
  3. For all major repairs to eliminate leaks or restore the integrity of the treatment system, the Permittee must obtain a certification by an independent professional engineer registered in Missouri that the repaired system is capable of handling hazardous wastes permitted for treatment within the unit without release for the intended life of the system before returning the system to service.



- E. Inspection Schedules and Procedures [40 CFR 264.602]
1. The Permittee shall inspect the treatment systems in accordance with the Inspection Schedule specified in the approved permit application.
  2. The Permittee shall inspect the following components of the treatment system once each operating day:
    - a. Above ground portions of the treatment system to detect corrosion or releases of waste;
    - b. Construction materials and the area immediately surrounding the externally accessible portion of the treatment system, to detect corrosion or signs of releases of hazardous waste; and
    - c. Floors for any residual waste material that has not been removed.
  3. The Permittee shall visually inspect equipment used to manage liquids daily for leaks, spills, or other releases of hazardous waste.
  4. The Permittee shall document compliance with Special Permit Condition II.E. and record and maintain the information in the operating record for the facility.
  5. The Permittee shall remove precipitation water and process upset water from the secondary containment for the slag treatment unit within twenty-four (24) hours after any event generating such water. This water shall be properly characterized and disposed in accordance with all applicable laws and regulations.
- F. Recordkeeping and Reporting [40 CFR 264.602]
1. The Permittee shall report to the Director, within twenty-four (24) hours of detection, when a leak or spill occurs from the treatment system or a secondary containment system to the environment.
    - a. A leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned-up within four hours, need not be reported.

- b. Releases that are contained within a secondary containment system or containment building and cleaned up within twenty-four (24) hours of release need not be reported.
2. Within thirty (30) days of detecting a release to the environment from the treatment system or secondary containment system, the Permittee shall report the following information to the Director:
  - a. Likely route of migration of the release;
  - b. Results of any monitoring or sampling conducted in connection with the release. If the Permittee finds it will be impossible to meet this time period, the Permittee shall provide the Director with a schedule of when the results will be available. This schedule must be provided before the required 30-day submittal period expires;
  - c. Proximity of down gradient drinking water, surface water, and populated areas;
  - d. Description of response actions taken or planned; and
  - e. Description of countermeasures needed to preclude migration to or in any and all media including but not limited to information specified in all provisions of 40 CFR 264.601(a), (b), or (c) as deemed appropriate by the Director.
3. The Permittee shall submit to the Director all certifications of major repairs being consistent with the specifications found in the permit application to correct releases within seven days from returning the treatment system to use.
4. The Permittee shall obtain, and keep on file at the facility, the written statements by those persons required to certify the design and installation of the treatment system.
5. The Permittee shall keep on file at the facility the written assessment of the system's integrity.

6. The Permittee shall maintain at the facility a record of the results of leak tests and integrity tests conducted.
  7. The Permittee shall document non-hazardous materials processed through the shredder unit as hazardous (in order to clear the shredder of hazardous waste) in the facility operating record.
- G. Special Requirements for Incompatible Wastes [40 CFR 264.601 and 40 CFR 264.17]
1. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same treatment system or the same secondary containment system.
  2. The Permittee shall not place hazardous waste in a treatment system that has not been decontaminated and that previously held an incompatible waste or material.
  3. The Permittee shall not place incompatible wastes, or incompatible wastes and materials, in the same treatment system or the same secondary containment system, unless such action is in compliance with the requirements of 40 CFR 264.17(b).
- H. Closure [40 CFR 264.601 and 10 CSR 25-7.264(2)(G)]

At closure of a miscellaneous unit, the Permittee shall remove or decontaminate all hazardous waste and hazardous residues from the miscellaneous unit, including, but not limited to: contaminated tank system components (liners, etc.), contaminated soils, and contaminated equipment and structures, and shall close in accordance with the Closure Plan in the approved permit application. If the Permittee is unable to close according to the Closure Plan, then the Permittee must submit a permit modification to the Department in accordance with 40 CFR 270.42. The Closure Plan, closure activities, cost estimates for closure, and financial responsibility for the miscellaneous units shall meet all of the requirements specified in 40 CFR Part 264 Subparts G and H, 10 CSR 25-7.264(2)(G) and 10 CSR 25-7.264(2)(H).

III. Storage in Containment Buildings [40 CFR Part 264 Subpart DD]

Seven containment buildings are permitted:

- the Rotary Melter Bunker,
- the Battery Bunker and Paste Storage Area,
- the Covered Material Storage Bins,
- the Blast Furnace Feed Storage Building,
- the Slag Storage Area Staging Bins,
- the Soda Slag Storage Bunker,
- and the Reverberatory Furnace Feed Storage Bunker.

These units are located as shown on figure F-1 and are subject to the requirements of 40 CFR Part 264 Subpart DD.

A. Waste Identification

The Permittee shall store in containment buildings only the hazardous wastes identified below. All stored wastes are subject to the terms of this Permit.

- |      |   |
|------|---|
| D004 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains an arsenic concentration greater than five milligrams per liter |
| D005 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a barium concentration greater than 100 milligrams per liter    |
| D006 | A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a cadmium concentration greater than one milligram per liter    |

- D007 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a chromium concentration greater than five milligrams per liter
- D008 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a lead concentration greater than five milligrams per liter
- D010 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a selenium concentration greater than one milligram per liter
- D011 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a silver concentration greater than five milligrams per liter
- K069\* Emissions control dust from secondary lead smelting

\*In accordance with 40 CFR 261.31, K069's listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further action is taken.

The Permittee is allowed to process the following hazardous waste in the Battery Bunker and Paste Storage containment building without storage:

- D002 A solid waste that exhibits the characteristic of corrosivity, that if using the test methods described at 40 CFR 261.22 has a pH of less than or equal to two, or greater than or equal to 12.5, or which corrodes steel at a rate greater than 6.35 mm per year at 55 degrees Celsius.

#### B. Waste Quantities

The Permittee shall store only the following quantities of hazardous wastes in containment buildings according to this Permit:

1. Storage of dry hazardous waste in the Rotary Melter Bunker containment building shall not exceed the lesser of 4060 tons or 31,600 cubic feet of material. The Permittee shall not store any wastes that contain free liquids in this area.

2. Storage of hazardous waste in the Battery Bunker and Paste Storage Area containment building shall not exceed the lesser of 8640 tons or 230,400 cubic feet of material in the Battery Bunker and storage of hazardous waste shall not exceed 3136 tons of paste in the Paste Storage Area.
  3. Storage of dry hazardous waste in the Covered Material Storage Bins Area containment building shall not exceed the 20,000 tons. Storage of hazardous waste in each of eight subdivisions of this building shall not exceed 2500 tons. The Permittee shall not store any wastes that contain free liquids in this area.
  4. Storage of dry hazardous waste in the Blast Furnace Feed Storage Building containment building shall not exceed the lesser of 11,853 tons or 4390 cubic yards of material. The Permittee shall not store any wastes that contain free liquids in this area.
  5. Storage of dry hazardous waste in the Reverberatory Furnace Feed Storage Bunker containment building shall not exceed the lesser of 1674 tons or 620 cubic yards of material. The Permittee shall not store any wastes that contain free liquids in this area.
  6. Storage of dry hazardous waste in the Slag Storage Area Staging Bins shall not exceed the design capacity as approved by the department. The Permittee shall not store any wastes that contain free liquids in this area.
  7. Storage of dry hazardous waste in the Soda Slag Storage Bunker shall not exceed 265 cubic yards. The Permittee shall not store any wastes that contain free liquids in this area.
- C. Design and Operating Standards [40 CFR 264.1101]
1. The containment buildings shall be completely enclosed with a floor, walls, and a roof to prevent exposure to the elements (e.g., precipitation wind, run-on), and to assure containment of the maximum permitted quantity of managed waste.
  2. The floors and containment walls of the buildings shall be constructed of materials of sufficient strength and thickness to support themselves,

the maximum permitted quantity of waste contents, and any personnel and heavy equipment that operate within the unit.

3. All surfaces shall be chemically compatible with the wastes to be managed in the containment buildings.
4. The containment buildings shall have a primary barrier designed to withstand the movement of personnel, waste, and handling equipment during the operating life of the facility.
5. All containment buildings, except the Battery Bunker and Paste Storage Area, shall manage only wastes containing no free liquids (the presence of which is determined by the paint filter test, a visual examination, or other appropriate means).
6. For the Battery Bunker and Paste Storage Area the Permittee shall maintain:
  - a. a primary barrier to prevent the migration of hazardous constituents into this barrier;
  - b. a liquid collection and removal system to minimize the accumulation of liquid on the primary barrier of the containment building; and
  - c. a secondary containment system including a secondary barrier to prevent migration of hazardous constituents into this barrier, and a leak detection system that is capable of detecting failure of the primary barrier and collecting accumulated hazardous wastes and liquids at the earliest practicable time. If leaks are detected, the Permittee shall comply with Special Permit Condition III.C.10.
7. The leak detection system for the Battery Bunker and Paste Storage Area shall be maintained in accordance with the following minimum requirements:
  - a. Constructed with a bottom slope of one percent or more; and

- b. Constructed of a granular drainage material with a hydraulic conductivity of  $1 \times 10^{-2}$  cm/sec or more and a thickness of 12 inches or more, or constructed of synthetic or geonet drainage materials and a transmissivity of  $3 \times 10^{-5}$  m<sup>2</sup>/sec or more.
8. The Permittee shall use controls and practices to ensure containment of the hazardous waste within the containment buildings; and, at a minimum:
  - a. Maintain the primary barrier free of significant cracks, gaps, corrosion, or other deterioration that could cause hazardous waste to be released from the primary barrier;
  - b. Maintain the level of the stored/treated hazardous waste within the containment walls of the unit so that material is not stored above the concrete wall of the containment system at the wall and so that if a material pile within the system collapses it will not cause a release of hazardous waste over the top of the containment system;
  - c. Operate decontamination stations at the heavy equipment exit of each containment building to prevent the tracking of wastes out of the buildings by decontaminating all waste/material-handling vehicles prior to their exiting a containment building. No waste/material-handling vehicle shall exit any containment building without being decontaminated, except during periods of freezing temperatures and/or weather conditions conducive to ice formation on travel surfaces. All rinsate shall be collected and properly managed. During periods of freezing temperatures and/or weather conditions conducive to ice formation on travel surfaces, and during any period the decontamination station is inoperable, waste materials visible on any waste/material handling vehicles shall be physically removed over the decontamination station prior to exiting; and
  - d. Take measures to control fugitive dust emissions such that any opening (doors, windows, vents, cracks, etc.) exhibits no visible emissions, including when vehicles and personnel are entering and exiting the containment building.



9. The Permittee shall obtain a certification by an independent professional engineer registered in Missouri that each containment building design meets the requirements of this Permit. These certifications shall be placed in the facility's operating record.
10. The Permittee shall evaluate whether liquid is being detected by the leak detection system of the Battery Bunker and Paste Storage Area on the date of issue of this Permit. If a leak is being detected, the Permittee shall:
  - a. operate the leak detection system for the primary barrier in the Battery Bunker and Paste Storage Area such that the amount or flow and pH of the liquid from the leak detection is recorded daily in the operating record;
  - b. comply with all provisions of Special Permit Condition III.C.11. if the flow or amount of liquid increases in excess of twice the baseline flow (the average flow or amount during the first six months of battery breaking production following the issuance of this Permit) and results in a pH less than 5.0 from the leak detection system.
  - c. install a sealant over the leaking portion of the floor within sixty (60) days of the date of the permit modification and determine if liquid is still being detected coming from the leak detection system and report to the Department within sixty (60) days per Schedule of Compliance Item III.
  - d. If liquid is still detected coming from the leak detection system after compliance with Special Permit Condition III.C.10.c., the Permittee shall submit a schedule and plan within sixty (60) days for additional repairs, additional bricking of areas, or other construction to bring the containment building into compliance with 40 CFR Part 264 Subpart DD standards per Schedule of Compliance Item IV. Such plan shall include letter notification of the Department after each phase of the plan and shall be immediately executed following approval. If the plan is unsuccessful in that liquid is still detected coming from the leak detection system after the plan is implemented, the

Permittee shall submit a Permit modification request to implement additional design changes to bring this unit into compliance.

Once liquid is no longer detected coming from the leak detection system for a continuous period of seven operating days, the Permittee shall comply with all provisions of Special Permit Condition III.C.11. for the Battery Bunker and Paste Storage Area containment building instead of this Special Permit Condition, III.C.10.

Upon verification that the unit meets 40 CFR Part 264 Subpart DD standards, the Permittee shall provide a verification signed by an independent professional engineer registered in Missouri that repairs have been completed in accordance with this Special Permit Condition, III.C.10.

11. If the Permittee detects a condition that could lead to or has caused a release of hazardous waste or hazardous waste constituents, the Permittee shall repair the condition promptly in accordance with the following procedures:
  - a. Enter a record of the discovery in the facility operating record;
  - b. Immediately remove the portion of the containment building affected by the condition from service (this condition does not apply to liquid detected by the leak detection system of the Battery Bunker and Paste Storage Area until after Schedule of Compliance Item III. (and IV., if applicable) except as specified in Special Permit Condition III.C.10.);
  - c. Determine what steps shall be taken to repair the containment building, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs (this condition does not apply to liquid detected by the leak detection system of the Battery Bunker and Paste Storage Area until after completion of Schedule of Compliance Item III. (and IV., if applicable) except as specified in Special Permit Condition III.C.10.); and
  - d. Notify the Director within seven (7) calendar days after the discovery of the condition, and within fourteen (14) working

days, provide a written notice to the Director with a description of the steps taken to repair the containment building, and the schedule for accomplishing the work not completed at the time of the written notice (this condition does not apply to liquid detected by the leak detection system of the Battery Bunker and Paste Storage Area until after Schedule of Compliance Item III. (and IV., if applicable) except as specified in Special Permit Condition III.C.10.).

The Director will review the information submitted, make a determination regarding whether the containment building must be removed from service completely or partially until repairs and cleanup are complete, and notify the Permittee of the determination and the underlying rationale in writing. Upon completing all repairs and cleanup, the Permittee shall notify the Director in writing and provide a verification signed by an independent professional engineer registered in Missouri that the repairs and cleanup have been completed according to the written plan submitted in accordance with Special Permit Condition III.B.11.d.

12. Permittee shall inspect the containment building areas and area immediately surrounding the containment buildings at least once every seven calendar days for the purposes of detecting any signs of releases of hazardous waste. The Permittee shall inspect the Battery Bunker and Paste Storage Area and the Blast Furnace Feed Storage Building containment buildings and liquid collection and leak detection systems, including the collection reservoirs, each day of battery breaking operation or at least once every seven days during periods of no battery breaking activity. Inspection results shall be recorded in the facility operating record.

D. Closure [10 CSR 25-7.264(2)(G)]

At closure of a containment building, the Permittee shall remove or decontaminate all hazardous waste and hazardous residues from the containment building, including, but not limited to contaminated soils and contaminated equipment and structures, and shall close in accordance with the Closure Plan in the approved permit application. If the Permittee is unable to close according to the Closure Plan, then the Permittee must submit a Permit modification to the Department in accordance with 40 CFR 270.42. The

Closure Plan, closure activities, cost estimates for closure, and financial responsibility for the containment buildings shall meet all of the requirements specified in 40 CFR Part 264 Subparts G and H, 10 CSR 25-7.264(2)(G) and 10 CSR 25-7.264(2)(H).

IV. Waste Minimization

Pursuant to 40 CFR 264.73(b)(9), the facility operating record shall contain a certification by the Permittee, made no less often than annually, that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage, or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.

V. Seismic Evaluation Requirements [10 CSR 25-7.270(2)(B)4.]

The Permittee has demonstrated compliance with the seismic requirements as certified by an independent professional engineer registered in Missouri. The Permittee shall maintain the seismic evaluation in the operating record.

VI. Slag Storage Area (SSA) Landfill [~~10 CSR 25-7.264(2)(N)~~40 CFR Part 264 Subpart N]

One SSA Landfill is to be constructed, and the planned boundary of the permitted landfill is shown on Figure ~~C-01~~A-3.

A. Waste Identification

The Permittee shall dispose of only the following hazardous wastes in the SSA Landfill at the facility, subject to the terms of this Permit. All hazardous waste shall be treated to meet 40 CFR Part 268 – Land Disposal Restrictions, prior to landfilling.

D004 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains an arsenic concentration greater than five milligrams per liter

- D005 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a barium concentration greater than 100 milligrams per liter
- D006 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a cadmium concentration greater than one milligram per liter
- D007 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a chromium concentration greater than five milligrams per liter
- D008 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a lead concentration greater than five milligrams per liter
- D010 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a selenium concentration greater than one milligram per liter
- D011 A solid waste that exhibits the characteristic of toxicity that, if using the test methods described at 40 CFR 261.24, contains a silver concentration greater than five milligrams per liter
- K069\* Emissions control dust from secondary lead smelting

\*In accordance with 40 CFR 261.31, K069's listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further action is taken.

B. Waste Quantities and Phased Progression of Fill

1. The landfill is a phased development and shall be constructed in lined phases and closed in cover phases as specified in the approved permit application.
2. No more than ~~two~~three cover phases will be open simultaneously during the operating life of the landfill, and the Financial Assurance Instrument shall be funded to reflect the maximum cost estimates for

closure of three cover phases, as specified in the Class 1 Permit Modification, approved ~~permit application~~ October 13, 2010.

3. The capacity of each development phase varies as specified in the application with a total landfill waste capacity of approximately ~~519,000~~ 653,000 cubic yards.

C. Design and Operating Requirements

1. The landfill must have a liner system designed, constructed, and installed to meet the requirements of 40 CFR 264.301(a) and (c) ~~and 10 CSR 25-7.264(2)(N)2~~, as specified in the approved permit application.
2. The SSA Landfill shall have a leachate collection system (LCS) above the primary liner and a leak detection system (LDS) between the primary synthetic liner and lower composite liner designed, constructed and installed to meet the requirements of 40 CFR 264.301(c) as specified in the approved permit application. The LDS will serve to detect leakage through the primary liner. Since the regulated unit overlies an existing primary slag disposal area, the LDS will also be an indicator of the performance of the SSA Landfill liner system and its potential for impact to groundwater in the immediate area of the SSA Landfill.
3. The LCS and LDS for each lined phase of development shall be maintained to be free flowing to the respective internal sump.
4. The Permittee shall maintain the LCS and LDS to automatically pump liquids from the landfill's internal sumps to the lift station where it is transferred through a force main to the plant's wastewater treatment plant as specified in the approved permit application.
5. In accordance with 10 CSR 25-7. 270(1) incorporating 40 CFR 270.32(b)(2) ~~264(2)(N)2.G.(H)~~, the Permittee shall analyze liquids from the LDS at least annually. If leachate is not generated within the LDS, an annual analysis shall be completed on leachate collected from the LCS. The leachate shall be analyzed for all analytical parameters identified in Table 1 below.

6. All storm water collected within the active phase of the landfill shall be pumped to the facility’s wastewater treatment plant, or other departmental approved location, in an expeditious manner, but in no case exceeding seven calendar days after the last storm event and in no case shall the head on the bottom liner exceed one foot.
7. The Permittee shall design, construct, and operate and maintain run-on and run-off control systems, as required by 40 CFR 264.301(g) and (h), respectively, as specified in the approved permit application.
8. If operation of the SSA Landfill demonstrates that the landfill contains particulate matter subject to wind dispersal, the Permittee shall cover or otherwise manage the landfill to control wind dispersal to meet the regulatory requirements of 40 CFR 264.301(j) as incorporated in 10 CSR 25-7.264(1). If wind dispersal control is necessary, the Permittee shall submit a Class 1 permit modification for the department’s approval.
9. The Permittee shall monitor the leachate collection system (LCS) and leak detection system (LDS) as specified in the approved permit application.
  - a. If the measured flow rate within the LDS exceeds a monthly average of 500 gallons per acre per day (gpad), the following action shall be taken by the Permittee:
    - (1) The Department shall be notified within seven days of the Permittee determining that the average monthly flow rate of 500 gpad has been exceeded.
    - (2) A report summarizing the previous month’s average daily flow rates shall be submitted to the Department on a calendar monthly basis.
    - (3) Submit to the Department a review of the latest annual analysis of leachate from the LDS, as required by 10 CSR 25-7.[270\(1\) incorporating 40 CFR 270.32\(b\)\(2\) 264\(2\)\(N\)2.G.\(H\)](#) and this Permit, with an assessment as to the need for a repetitive chemical analysis of the LDS leachate.

- b. If the measured flow rate within the LDS exceeds a monthly average of 1200 gpad, the Permittee shall notify the Department within fifteen (15) days. The Permittee shall also conduct a detailed, specific assessment of the elevated leakage rate. If the assessment determines that remediation action is warranted, the Permittee shall develop and implement a remediation plan to improve retardation of liquids through the primary synthetic liner. The assessment and subsequent remediation plan shall be approved by the Department prior to implementation.
10. A paved roadway surface shall be constructed between the treated slag staging area and the entry point(s) into each active landfill cell prior to operation of each cell. Paved roadway surfaces shall extend to within (3) three feet of the toe of the landfill cell's berm at each entry point. Paved roadway surfaces shall be maintained as necessary to provide a structurally sound surface that is capable of supporting the weight of loaded trucks hauling treated slag. Paved roadway surfaces shall be capable of being effectively cleaned by a mechanical sweeper, or other method(s) approved by the Department, and shall, upon construction, be incorporated into the facility's overall plant sweeping program. Paved roadway surfaces shall be mechanically swept at least once each day that treated slag is hauled to the landfill cell(s) or cleaned by other method(s) approved by the Department, ~~As specified in the approved permit application, a concrete roadway shall be utilized between the treated slag staging area and the perimeter of the landfill. The roadway shall be cleaned and repaired or resurfaced as necessary to provide a hard surfaced road that is capable of supporting truck traffic and can be cleaned by a mechanical sweeper. Upon commencement of landfill operations, the haul road will be incorporated into the facility's overall plant sweeping program. The haul road will be mechanically swept at least once each day that treated slag is hauled to the landfill,~~ except during periods of inclement weather and/or freezing weather conditions.
11. The precise location of the landfill including location and depth of waste shall be determined with respect to permanently surveyed benchmarks in accordance with 40 CFR 264.309 and as specified in the approved permit application.



12. The Permittee shall maintain records of operations and inspections of the landfill in accordance with 40 CFR 264.73 and as specified in the approved permit application. The Permittee shall implement an inspection program and maintain inspection records for the landfill in accordance with 40 CFR 264.15 and 40 CFR 264.303 and as specified in the approved permit application. While in operation, the Permittee shall inspect the landfill weekly and after storms in accordance with 40 CFR 264.303(b).
13. The Permittee shall construct the landfill in compliance with this Permit and the landfill design as specified in the approved permit application. In addition, the landfill shall be constructed in accordance with departmental approved construction plans and specifications, and the construction quality assurance/quality control (QA/QC) plan.

The Permittee may not dispose of hazardous waste into the newly constructed landfill until:

- a. The Permittee has submitted to the Director by certified mail or hand delivery a letter signed by the Permittee and an independent professional engineer registered in Missouri stating that the facility has been constructed or modified in compliance with this Permit and shall request authorization to operate in accordance with ~~10 CFR 270.30(1)(2), as incorporated in~~ 10 CSR 25-7.270(1), incorporating 40 CFR 270.30(1)(2)(C) ~~I.B.~~. The Permittee shall also include with this submittal the “as-built” design drawings and specifications for the landfill. These drawings and specifications shall be certified by an independent professional engineer registered in Missouri.
- b. The Permittee has submitted to the Director by certified mail or hand delivery a certification signed by the Construction Quality Assurance (CQA) officer that the approved CQA plan has been successfully carried out and that the unit meets the requirements of 40 CFR 264.301-(c) ~~or (d)~~. Documentation supporting the CQA officer’s certification must be furnished to the Department upon request.

- (1) The Director has inspected the newly constructed landfill and finds it is in compliance with the conditions of this Permit; or
- (2) Within fifteen (15) days of the date of submission of the letter in paragraph 13.a. of this section, the Permittee has not received notice from the Director of his or her intent to inspect, prior inspection is waived, and the Permittee may commence disposal of hazardous waste into the landfill.

14. Prior to receipt of waste into the landfill, the Permittee shall file with the local County Recorder of Deeds an “Agreement for Easement, Notice and Covenant Running with Land.” The easement shall provide the Department access to the landfill property to implement the closure and post-closure plan, if necessary. The properties to which the easement will apply shall be owned by the Permittee. The easement shall be signed by authorized representatives of the Permittee. A copy of the easement shall be sent to the Department prior to filing with the local County Recorder of Deeds.

15. The landfill shall be designed, constructed, and operated to minimize erosion, landslides and sloughing in accordance with 10 CSR 25-7.270(1), incorporating 40 CFR 270.32(b)(2)-~~264(2)(N)~~2.J.

VII. Landfill Closure [40 CFR Part 264 Subpart G ~~and 10 CSR 25-7.264(2)(G)~~]

A. In accordance with 40 CFR 264.111, the Permittee must close the SSA Landfill in a manner that:

1. Minimizes the need for further maintenance, and
2. Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure release of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the soils, ground or surface waters, or to the atmosphere.

- B. The Permittee shall submit the ~~90 percent~~ design specifications, drawings, and CQA plan for closure of each of the landfill's cells for departmental approval prior to implementation of closure of any cell of the SSA Landfill.
- C. In accordance with 40 CFR 264.112(c), the Permittee must submit a written notification of or request for a permit modification to amend the closure plan approved under this Permit.
- D. The Permittee shall notify the Department in writing at least sixty (60) days prior to the date final closure of any cell of the landfill is expected to begin.
- E. The landfill final cover shall be constructed in cover phases as specified in the approved permit application and the design specifications, drawings, and construction QA/QC plan approved by the Department. In the event that the SSA Landfill is not constructed over the entire footprint of the existing primary slag disposal area covered under Metallic Minerals Waste Management Area Permit MMP-002, the Permittee shall submit a Class 1 permit modification with prior Director approval, outlining how the primary slag pile will be properly closed/capped in accordance with 10 CSR 45-6.020. In accordance with 40 CFR 264.310 and this Permit, the final cover system shall be designed and constructed to:
  - 1. Provide long-term minimization of migration of liquids through the closed landfill;
  - 2. Function with minimum maintenance;
  - 3. Promote drainage and minimize erosion or abrasion of the cover;
  - 4. Accommodate settling and subsidence so that the cover's integrity is maintained; and
  - 5. Have a permeability less than or equal to the permeability of any bottom liner system.
- F. In accordance with 40 CFR 264.115, within sixty (60) days of closure of the phased cover areas, and upon final closure, the Permittee shall submit to the Department certification that the landfill, or phase of the landfill, has been closed in accordance with this Permit and approved design, plans and specifications. The certification must be signed by the Permittee and an

independent professional engineer registered in Missouri. Supporting documentation shall be included with the engineer's certification.

- G. In accordance with and as specified in 40 CFR 264.116 and no later than the submission of the certification of the final closure of the SSA Landfill, the Permittee must submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Department, a survey plat indicating the location and dimensions of landfill cells with respect to permanently surveyed benchmarks. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use, must contain a note, prominently displayed, which states the owner's or operator's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable 40 CFR Part 264 Subpart G regulations. The plat must be prepared and certified by a professional land surveyor registered in Missouri.

~~H. In accordance with 10 CSR 25-7.264(2)(G)3. and 4., upon certification of closure, the Permittee shall record a notation on an instrument which is normally examined during a title search that in perpetuity will notify potential purchasers of the property that the land has been used to manage hazardous waste. The Permittee shall submit a notarized statement to the Department certifying that the notation has been recorded with the Iron County Recorder of Deeds.~~

VIII. Post-Closure Care [40 CFR Part 264 Subpart G ~~and 10 CSR 25-7.264(2)(G)~~]

- A. The Permittee shall comply with all applicable provisions of 10 CSR 25-7.264(1), incorporating 40 CFR Part 264 Subpart G, ~~as incorporated in 10 CSR 25-7.264(1) and modified in 10 CSR 25-7.264(2)(G)~~. Post-closure care begins after completion of closure of the SSA Landfill and continues for thirty (30) years after that date unless otherwise specified by the Department.
- B. During the post-closure care period, the Permittee must comply with the requirements of 40 CFR 264.310 including, but not limited to:
1. Maintaining the integrity and effectiveness of the final cover;
  2. Continuing to operate the leachate collection system (LCS) as outlined in the approved permit application until leachate is no longer detected;

3. Maintaining and monitoring the leak detection system (LDS) and comply with all applicable LDS requirements as outlined in the approved permit application;
  4. Maintaining and monitoring the groundwater monitoring system and complying with all applicable requirements of 40 CFR Part 264 Subpart F;
  5. Preventing run-on and run-off from eroding or otherwise damaging the final cover; and
  6. Protecting and maintaining surveyed benchmarks used in complying with 40 CFR 264.309.
- C. Post-closure care shall be in accordance with the post-closure care plan in the approved permit application. The post-closure plan may be amended in accordance with 40 CFR 264.118(d) at any time during the active life of the facility or the post-closure period. Amendments are subject to the applicable permit modification requirements of [10 CSR 25-7.270\(1\), incorporating 40 CFR Part 270 Subpart D, ~~10 CSR 25-7.270\(2\)\(D\)~~](#), and 10 CSR 25-8.124.
- D. After final closure has been certified, the facility contact during the post-closure care period must keep the approved post-closure plan for the remainder of the post-closure period, as required by 40 CFR 264.118(c).
- E. In accordance with 40 CFR 264.120 and no later than sixty (60) days after the completion of the post-closure care period, the Permittee must submit to the Department, by certified mail, a certification that the post-closure care period was performed in accordance with the approved plan. The certification must be signed by the Permittee and an independent professional engineer registered in Missouri.

IX. Groundwater Monitoring [40 CFR 264.90 - 40 CFR 264.100]

- A. Groundwater Protection Standard, Hazardous Constituents, and Concentration Limits (40 CFR 264.92, 264.93, and 264.94).

The Groundwater Protection Standard (GPS) establishes the maximum concentration limits for hazardous constituents in the groundwater at the point of compliance during the compliance period. The SSA Landfill will be sited

on existing smelter slag, and the hazardous constituents potentially associated with the smelter slag are naturally occurring inorganics. These facts add complexity to the determination of statistically significant increases in the concentrations of indicator parameters and/or hazardous constituents in the groundwater. As a result, GPS values will be established in the future via modification of this Permit if, and when, confirmed, statistically significant increases in the groundwater detection monitoring parameters (listed in Table 1) are identified. Statistical evaluation of the groundwater detection monitoring data will be based on intrawell comparisons as described in the approved Sampling and Analysis Plan (SAP) and shall be performed on all hazardous constituents and indicator parameters outlined in Table 1. The intrawell comparisons shall be based on those methods contained in the most recent version of the USEPA guidance document Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities and any subsequent addendum, (the current version is dated April 1989 and the subsequent addenda is dated July 1992) or other methods that are approved in advance by the Department.

Any initial evidence of a statistically significant increase will require sampling at the affected point of compliance well(s) for all detection monitoring parameters outlined in Table 1 to confirm the increase. This confirmation sampling shall be performed at the next scheduled sampling event, not to exceed one hundred eighty (180) days. Confirmation of the statistically significant increase shall also include a “weight of evidence approach” involving assessment of the concentrations of detection monitoring parameters in samples obtained from the Leachate Collection System (LCS) and/or the Leak Detection System (LDS).

Sampling and analysis of liquids from the LCS and/or LDS for the groundwater detection monitoring parameters listed in Table 1 shall be performed at the time of the above-referenced confirmation sampling. The LCS/LDS analytical results from this sampling are a key part of the assessment described in the following paragraph. As appropriate, the Permittee may also use the LCS/LDS analytical results from the sampling required by Special Permit Condition VI.C.5. in assessing the “weight of evidence” related to statistically significant evidence of releases from the SSA Landfill. All LCS/LDS analytical results shall be presented in the assessment described in the following paragraph.

If a statistically significant increase is confirmed in one or more point of compliance monitoring wells and evidence of contaminated leachate similar to the monitoring well analytes exists in the LDS and/or the LCS, the Permittee shall notify the Department within seven (7) days. Within sixty (60) days of the foregoing notification, the Permittee shall prepare and submit to the Department a detailed assessment of the cause(s) for the statistically significant increase(s) in the groundwater detection monitoring parameter concentrations. If the Department determines the increases are due to releases from the SSA Landfill, the Permittee shall submit, within sixty (60) days of such determination, a Class 3 permit modification to establish a compliance monitoring program in accordance with 40 CFR 264.99.

If a statistically significant increase is confirmed in one or more point of compliance monitoring wells and there is no evidence of similarly contaminated leachate in the LDS and/or the LCS, it is likely that groundwater is being impacted by the primary smelter slag present beneath the construction footprint of the SSA Landfill. The Permittee shall notify the Department within seven (7) days of such confirmation. The Department will then determine, in consultation with the Permittee, what, if any, additional action is required to address the situation. Such action may include implementation of an Interim Measure in accordance with Corrective Action Condition IV. The Department will notify the Permittee in writing of any additional actions that are required of the Permittee.

1. Confirmation of a statistically significant increase in the concentration(s) of the detection monitoring parameters due to a release from the SSA Landfill will trigger development of a groundwater compliance monitoring program (including establishment of a GPS) via a permit modification in accordance with 40 CFR 270.41 or 40 CFR 270.42, as appropriate.
2. The Department has determined that elevated sulfate levels in groundwater are a facility-wide issue that is not restricted to the SSA Landfill area. Sulfate is not a reliable parameter for SSA Landfill release detection and assessment. Sulfate levels will continue to be monitored at the point of compliance wells, but statistically significant increases in the sulfate concentration in these wells will not be used to trigger a groundwater compliance monitoring or corrective action program for the SSA Landfill. However, sulfate monitoring is relevant

to site-wide corrective action pursuant to 40 CFR 264.101 and will continue.

3. As part of the “weight of evidence approach” discussed above, the Department may require additional groundwater monitoring for parameters such as dissolved oxygen or oxidation-reduction potential to assess changes in the subsurface resulting from construction and operation of the SSA Landfill that could lead to statistically significant increases in the detection monitoring parameters. For example, formation of reducing conditions in the subsurface resulting from reductions in infiltration of oxygen-rich precipitation which could lead to mobilization of metals from the primary slag. If such monitoring becomes necessary, the Department will notify the Permittee in writing as to those monitoring requirements at least sixty (60) days prior to the next regularly scheduled sampling event.
4. The Permittee shall sample and analyze groundwater every five (5) years from all point of compliance wells as summarized in Table 1 below. Further, if an initial statistically significant increase in the concentration of a groundwater detection monitoring parameter(s) is identified, the Permittee shall, during the next regularly scheduled sampling event, sample and analyze groundwater from the affected well(s) for the parameters summarized in Table 1 below.
5. Any addition of hazardous constituents to the monitoring list as a result of the above determination shall require a Class 1 permit modification with prior Director approval. Any other changes to the monitored analytes list shall require a permit modification in accordance with 40 CFR 270.42.

B. Point of Compliance (40 CFR 264.95)

The Point of Compliance is defined as a vertical surface at the edge of the SSA Landfill that extends perpendicularly downward into the uppermost aquifer underlying the SSA Landfill. For the purpose of groundwater detection monitoring, wells monitored to demonstrate groundwater quality passing the point of compliance will include both bedrock and residuum-bedrock interface wells. The bedrock point of compliance monitoring wells are K20, K21, and K22. The residuum-bedrock interface point of compliance monitoring wells are K2, K3, K4, K6, K7, K10, K12, and K13.



C. Compliance Period (40 CFR 264.96)

A compliance period for the SSA Landfill need not be established unless and until a groundwater compliance monitoring program becomes necessary pursuant to 40 CFR 264.99. If needed, the compliance period will be established via a permit modification pursuant to 40 CFR 270.42.

D. General Groundwater Monitoring Requirements (40 CFR 264.97)

The Permittee shall revise and resubmit the October 2006 SAP for the Department's approval within sixty (60) days of the effective date of this Permit modification to reflect any additional requirements contained in this Permit.

1. The Permittee shall comply with applicable sections of 40 CFR 264.97 for detection monitoring systems as specified in 40 CFR 264.98 and this Permit. All groundwater SAP procedures and techniques used in groundwater sampling, frequency, analysis, and measurement of groundwater-related parameters shall be designed to meet the requirements of 40 CFR Part 264 Subpart F, as incorporated in 10 CSR 25-7.264(1) and modified in 10 CSR 25-7.264(2)(F), and this Permit. The Permittee's sampling, analysis, and measurement protocols shall ensure the representative nature of all analysis and measurement results.
2. The Permittee shall retain a copy of the approved groundwater SAP on site and comply with the sampling and analysis procedures contained therein to provide a reliable indication of the groundwater quality below the SSA Landfill. The groundwater SAP shall set forth sample collection, preservation and shipment methodology; chain-of-custody procedures; and analytical methodology for field samples, trip blanks, and other quality control samples.
3. If the Permittee or the Department determines that a point of compliance (detection monitoring) well is incapable of adequate SSA Landfill release detection, the Permittee shall redevelop, repair or replace the well prior to the next regularly scheduled sampling event, as appropriate, to meet the requirements of 40 CFR 264.97(a)(3). Criteria and procedures for well redevelopment repair, and replacement shall be detailed in the groundwater SAP.

4. Any new groundwater monitoring well(s) installed by the Permittee to meet the requirements of this Permit shall be designed and constructed in accordance with the requirements of 40 CFR 264.97, 10 CSR 23-4, Monitoring Well Construction Code of the Missouri Well Construction Rules and/or well-specific plans and specifications approved by the Department.

The Permittee shall submit to the Department's Hazardous Waste Program a copy of the well certification report form and the resulting certification acceptance required by 10 CSR 23-4.020 for any new monitoring wells installed pursuant to this Permit. This information shall be reported as part of the Semi-Annual/Annual Groundwater Monitoring Report as defined in Special Permit Condition IX.F.

5. Plugging and abandonment of any groundwater monitoring well(s) pursuant to the requirements of this Permit shall meet the requirements of 10 CSR 23-4.080.

The Permittee shall submit to the Department's Hazardous Waste Program a copy of the well registration report form and resulting registration acceptance required by 10 CSR 23-4.080 for any monitoring wells plugged pursuant to this Permit. This information shall be reported as part of the Semi-Annual/Annual Groundwater Monitoring Report as defined in Special Permit Condition IX.F.

6. Any change in the number, location, depth, or design of the point of compliance wells monitoring the SSA Landfill shall require a Class 2 permit modification in accordance with 40 CFR 270.42. Replacement of any point of compliance wells without changing their location, depth, or design shall require a Class 1 permit modification without prior Director approval in accordance with 40 CFR 270.42. The Permittee may elect to submit an annual permit modification to address these changes in lieu of a modification for each individual change.
7. The Permittee shall contact the Department at least five (5) working days prior to conducting any field work associated with the construction or modification of the groundwater monitoring system required by this Permit. The Department will then have the option of observing any portion of the system's construction or modification.

This notification requirement applies to major work such as new wells, retrofitting of existing wells, or abandonment of wells. It does not apply to minor repairs, minor maintenance, or other minor changes.

8. A monitoring well inspection and maintenance program shall be implemented for the duration of groundwater monitoring pursuant to this Permit. This program shall be designed to ensure the structural integrity of all monitoring well installations. The Permittee's groundwater SAP shall address the details of this program in accordance with the following requirements.
  - a. Surface well integrity inspections shall be performed at the time of each sampling event and shall be documented on an inspection log sheet. Surface integrity evaluations for each monitoring well shall include a visual inspection of the outer protective casing, inner casing riser, surface well seal, well cap, and locking mechanism to document any damage or deterioration. The ground surface in the immediate vicinity of each monitoring well and the annular space between the outer protective casing and casing riser shall be inspected for visible anomalies (e.g., collection or ponding of water, ground subsidence, etc.).
  - b. Subsurface well integrity inspections shall be performed annually in wells where it is physically possible in accordance with the provisions contained in the Permittee's groundwater SAP and shall be documented on a well inspection log sheet. Wells with dedicated pumps will be inspected each time the pumps are removed and, at a minimum, once every five (5) years. Subsurface well integrity inspections may consist of a combination of elements, including total well depth measurements, groundwater turbidity measurements, in-situ hydraulic conductivity tests, casing caliper logs, down-hole television camera surveys, and/or other methods capable of verifying the subsurface integrity of the well casing and screen.
  - c. Wells with dedicated pumps will be subject to a wellbore siltation evaluation each time the pumps are removed and, at a minimum, once every five (5) years. The Permittee's groundwater SAP shall specify performance of this evaluation

to assess down-well siltation and well screen occlusion in all monitoring wells. This requirement shall be designed to ensure the representative nature of the Permittee's groundwater sample analysis and field measurement results through minimization of sampling and measurement interferences (e.g., turbidity, excessive well screen occlusion, etc.). The Permittee's groundwater SAP shall specify a well redevelopment trigger criterion based on a percentage of well screen occlusion and the potential of such occlusion to compromise the representative nature of the Permittee's groundwater sample analysis and field measurement results. Wells demonstrating well screen occlusion equal to or in excess of the selected criterion shall be redeveloped prior to the next scheduled sampling event.

- d. Monitoring well repairs shall be undertaken within thirty (30) days of identification of any surface or subsurface well integrity problem. If adverse weather or site conditions preclude the Permittee from gaining access to and/or repairing flood-impacted monitoring wells within the above-noted periods, then the Permittee shall take appropriate action as soon as practicable. Written justification for any delay, completed well inspection log sheets, a narrative description of any well repairs, and before and after photographic documentation (in the case of visible surface well repairs) shall be provided to the Department as part of the Semi-Annual/Annual Groundwater Monitoring Report as defined in Special Permit Condition IX.F.

E. Detection Monitoring Program (40 CFR 264.98)

1. The Permittee shall perform groundwater sampling/analysis and field measurement of groundwater detection monitoring parameters according to the schedule presented in Table 1.
  - a. Sampling and analysis in accordance with this schedule shall begin during the next regularly scheduled sampling event following the effective date of this Permit modification.

- b. Sampling and analysis of groundwater from any new wells required by 40 CFR Part 264 Subpart F and this Permit shall be performed no later than the next regularly scheduled sampling event following their installation.
2. Only single sample analyses (as opposed to replicates) are required for the parameters listed in Table 1, with the exception of duplicate samples taken for Quality Assurance/Quality Control (QA/QC) purposes.
3. Field parameter values measured and reported by the Permittee shall be representative of stabilized well conditions.
4. A determination of statistically significant increases in the groundwater detection monitoring parameter concentration(s) over each well's prediction limits shall be conducted in accordance with the procedures described in the approved SAP.
5. The Permittee shall initiate procedures as described in the approved SAP and this Permit as a response to demonstrated statistically significant increases in the groundwater detection monitoring parameter concentration(s) over prediction limits.
6. The Permittee shall perform groundwater analyses every five (5) years for the select parameters identified in Table 1 unless triggered sooner due to a statistically significant increase as outlined in Special Permit Condition IX.A.

**Table 1 - Groundwater Monitoring, Sampling, Analysis, and Parameter Measurement Schedule**

Parameters*	Type**	Maximum Detection Limit (ug/l)	Frequency
Antimony	HC	3.0 (a)	semi-annually
Arsenic	HC	1.0 (a)	semi-annually
Barium	HC	1.0 (a)	semi-annually
Cadmium	HC	1.0 (a)	semi-annually
Chromium	HC	4.0(a)	semi-annually
Copper	IN	3.0 (a)	semi-annually
Lead	HC	1.0 (a)	semi-annually
Nickel	HC	5.0 (a)	semi-annually
Selenium	HC	1.0 (a)	semi-annually
Silver	HC	5.0 (a)	semi-annually
Cobalt	IN	2.0 (a)	***every five years
Mercury	HC	0.2 (a)	***every five years
Thallium	HC	1.0 (a)	***every five years
Tin	IN	60 (a)	***every five years
Vanadium	IN	5.0 (a)	***every five years
Zinc	IN	6.0 (a)	***every five years
Sulfate	IN	1.0 (a)	semi-annually
pH	FM/IN	Not Applicable	semi-annually
Specific Conductance	FM/IN	Not Applicable	semi-annually
Static Groundwater Elevation (b)	FM	Not Applicable	semi-annually
Temperature	FM	Not Applicable	semi-annually
Total Well Depth	FM	Not Applicable	semi-annually

- (a) Detection Limit based upon the lowest achievable practical quantitation limit available from the Permittee’s contract laboratory.
- (b) Potentiometric measurements shall be obtained at the time of each regularly scheduled sampling event from all monitoring wells at the facility, including those that are not being sampled regularly. Elevation shall be to the nearest 0.01 foot.
- \* Total Recoverable Metals
- \*\* HC = Hazardous Constituent, FM = Field Measurement, IN = Indicator
- \*\*\* Analysis frequency is every five years unless triggered sooner in selected wells due to an initial statistically significant increase as outlined in Special Permit Condition IX.A.

F. Groundwater Related Reporting Requirements.

The Permittee shall prepare and submit reports to the Department on a semi-annual basis. A Semi-Annual Report shall be submitted to the Department by September 1 of each calendar year for the preceding calendar half-year (i.e., January through June). The Semi-Annual Report shall include all groundwater monitoring data, new well/boring data, field records and statistical analyses of the groundwater detection monitoring data.

The Permittee shall prepare and submit, on an annual basis, a comprehensive evaluation of the facility-wide groundwater monitoring program for the preceding calendar year (i.e., January through December). The Permittee's Annual Groundwater Monitoring Report shall be submitted to the Department by March 1 of each calendar year for the preceding calendar year.

1. The Permittee's Annual Groundwater Monitoring Report shall contain a narrative discussion of the nature and evolution of the Permittee's facility-wide groundwater monitoring program as well as conclusions concerning the overall adequacy of the program as related to its intended purpose, including any interim measures/stabilization actions. Any conclusions concerning inadequacies in the Permittee's groundwater monitoring program shall be accompanied by a discussion of proposed remedies. Specific details concerning any proposed remedies should be further developed outside of the scope of these reports and/or as otherwise specified in this Permit.
2. The Permittee's Annual Groundwater Monitoring Report shall comprehensively address all of the technical requirements of 40 CFR Part 264 Subpart F and this Permit. The Permittee shall summarize relevant groundwater monitoring information and shall present this information in the form of narrative discussions, groundwater flow calculations, and/or diagrammatic illustrations (e.g., tabular groundwater and statistical data summaries, hydrogeologic and potentiometric contour maps/cross-sections, chemical parameter trend graphs, calculated rate(s) of contaminant migration, contaminant isoconcentration maps/cross-sections, fence/isometric diagrams, groundwater flow nets, etc.), as appropriate.
3. The Permittee shall submit to the Department, in the Semi-Annual/Annual Groundwater Monitoring Reports, detailed boring logs

for new exploratory borings and/or detailed as-built monitoring well diagrams for any new monitoring wells installed during the corresponding reporting period.

X. Surface Water Monitoring Program [10 CSR 25-7.264(2)(F)4]

In accordance with 10 CSR 25-7.264(2)(F)4.A. (III), the Permittee has demonstrated in the approved permit application that the surface water run-off from the SSA Landfill will be monitored in accordance with the facility's Missouri State Operating Permit (MSOP), and the MSOP is substantially equivalent to that which would otherwise be required under Missouri Hazardous Waste Management regulations. The Permittee shall submit to the department's Hazardous Waste Program and EPA a copy of the monitoring reports and submit a summary of the sampling with the Semi-Annual/Annual Groundwater Monitoring Reports required by Special Permit Condition IX.F.

XI. Financial Assurance [40 CFR Part 264 Subpart H and 10 CSR 25-7.264(2)(H)]

- A. In accordance with 40 CFR 264.142, the Permittee shall maintain a detailed written estimate, in current dollars, of the cost for implementing closure of the facility. The estimate must be based on the cost of hiring a third party to conduct closure activities. During the active life of the facility, the Permittee must adjust the closure cost estimate for inflation within sixty (60) days prior to the anniversary date of the establishment of the financial instrument used to comply with 40 CFR 264.143 and 10 CSR 25-7.264(2)(H).
- B. In accordance with 40 CFR 264.144, the Permittee shall maintain a detailed written estimate, in current dollars, of the annual cost of post-closure monitoring and maintenance of the SSA Landfill. The estimate must be based on the cost of hiring a third party to conduct these activities. The estimate is calculated by multiplying the annual cost estimate by the number of years of post-closure care required. The post-closure cost estimate for the landfill is included in the approved permit application. During the active life of the facility and throughout the post-closure care period, the Permittee must adjust the post-closure cost estimate for inflation within sixty (60) days prior to the anniversary date of the establishment of the financial instrument(s) used to comply with 40 CFR 264.145 and 10 CSR 25-7.264(2)(H).
- C. The Permittee must comply with the financial requirements of 40 CFR Part 264 Subpart H, as incorporated and modified at 10 CSR 25-7.264(1) and



(2)(H), for both closure and post-closure care. The financial assurance instrument(s) for closure and post-closure care shall be based on the cost estimates approved in this permit modification and as revised annually for inflation costs, and any subsequent revised cost estimates for amended and approved closure and/or post-closure care plans.

- D. The Permittee must demonstrate financial responsibility for bodily injury and property damage to third parties for sudden and non-sudden accidental occurrences. This liability coverage must be demonstrated in accordance with the requirements of 40 CFR 264.147.
- E. E. If the MMP-002 is to be terminated, the financial assurance instrument maintained by the Permittee shall also include an amount of \$20,000 for the implementation, if required, of closure of the primary slag disposal area not covered by closure of the SSA Landfill. The Permittee has the option of requesting a reduction of the \$20,000 upon placement of each phase of the SSA Landfill. The reduction from the \$20,000 will be based on the percentage of the primary slag disposal area covered. For each percent of the primary slag area that is covered, equal percent may be reduced from the \$20,000 financial instrument.

## **CORRECTIVE ACTION CONDITIONS**

I. Identification of Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) [40 CFR 264.101]

Figure N-1 and Table N-1 identify and show the location of the SWMUs and AOCs identified at the Doe Run Buick Resource Recovery Facility. Table N-1 also shows the current status of each SWMU and AOC.

A revised Resource Conservation and Recovery Act Facility Investigation (RFI) work plan was submitted by Doe Run in November 1991 and approved in August 1992. The RFI was conducted and an RFI report was submitted in March 1994. A supplemental RFI was conducted in 1998 and a report on the supplemental RFI was submitted in August 1999. Conditional approval of the RFI was granted in December 2000 and a Corrective Measures Study (CMS) Plan was submitted to the Department in February 2001. At the time of this Permit renewal, the Department has not approved the CMS Plan.

Additional corrective action submittals include a revised Interim Measures Plan that was submitted in September 1990 and completed in 1994. A RCRA Corrective Action Interim Measures Report was submitted in December 1994 and additional information in response to comments was submitted in December 1996. An assessment of 20 acres of property purchased by Doe Run from Cominco Mine Company was conducted by Barr Engineering and a report titled Former Cominco Property SWMU/AOC Assessment Report was submitted in January 1999.

The approved RCRA Part B Application submitted in June 2001 contained a closure plan for the Acid Spill Berm (SWMU 13) and Sanitary Wastewater Lagoon (SWMU 24) in Attachment N-1. Closure/remediation and/or final remedy of these SWMUs will be addressed under future corrective action as part of the CMS.

- A. The Permittee submitted a CMS Plan to the Department in February 2001. The Department will complete review of the CMS Plan in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII.

Following approval of the CMS Plan, the Permittee shall comply with the schedule of submittals contained in the plan, including ultimate submittal of the Final CMS Report in accordance with Corrective Action Permit Condition VIII. and Final Remedy Approval per Corrective Action Permit Condition IX.

Contingent Corrective Action Permit Conditions V. and VI. apply only to newly identified SWMUs and AOCs, or newly identified releases from previously identified SWMUs and AOCs, as defined in Corrective Action Permit Conditions II. and III.

- II. Notification Requirements for, and Assessment of, Newly Identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)
- A. The Permittee shall notify the Department and the United States Environmental Protection Agency (USEPA) in writing of any SWMU(s) or AOC(s) identified subsequent to the issuance of this Permit no later than 15 days after discovery.
  - B. The Department may require a SWMU/AOC Assessment Work Plan for conducting an investigation of any newly identified SWMU(s) or AOC(s). Within thirty (30) days after receipt of the Department's request for a SWMU/AOC Assessment Work Plan, the Permittee shall submit a SWMU/AOC Assessment Work Plan which shall include a discussion of past waste management practices at the unit, as well as a sampling and analysis program for groundwater, land surface and subsurface strata, surface water and/or air, as necessary to determine whether a release of hazardous waste, including hazardous constituents, from such unit(s) has occurred, or is occurring. The sampling and analysis program shall be capable of yielding representative samples and must include monitoring parameters sufficient to assess the release of hazardous waste and/or hazardous constituents from the newly identified SWMU(s)/AOC(s) to the environment. The SWMU/AOC Assessment Work Plan shall specify any data to be collected to provide for a complete SWMU/AOC Assessment Report, as specified below, and shall contain a schedule for implementation of the work plan which is predicated on the date of Departmental approval of the plan.
  - C. The SWMU/AOC Assessment Work Plan will be reviewed in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. The Permittee shall complete implementation in accordance with the schedule contained in the approved plan.
  - D. The Permittee shall submit a SWMU/AOC Assessment Report to the Department and the USEPA according to the schedule specified in the approved SWMU/AOC Assessment Work Plan. The SWMU/AOC Assessment Report shall present and discuss the information obtained from

implementation of the approved SWMU/AOC Assessment Work Plan. At a minimum, the SWMU/AOC Assessment Report shall provide the following information for each newly identified SWMU/AOC:

1. location of the newly identified SWMU/AOC in relation to other SWMUs/AOCs;
  2. The type and function of the unit;
  3. The general dimensions, capacities, and structural description of the unit;
  4. The period during which the unit was operated;
  5. The physical and chemical properties of all wastes that have been or are being managed at the SWMU/AOC, to the extent available;
  6. The results of any sampling and analysis conducted;
  7. Past and present operating practices;
  8. Previous uses of the area occupied by the SWMU/AOC;
  9. Amounts of waste handled; and
  10. Drainage areas and/or drainage patterns near the SWMU(s)/AOC(s).
- E. The Department will review the SWMU/AOC Assessment Report in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. Based on the findings of this report, the Department will determine the need for further investigations, including stabilization or a Resource Conservation and Recovery Act Facility Investigation (RFI), at specific unit(s) identified in the SWMU/AOC Assessment Report.
- F. If the Department determines that additional investigations are needed, the Department may require the Permittee to prepare and submit for approval a work plan for such investigations. The Department will review this work plan for additional investigations in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII.

The Permittee shall complete implementation in accordance with the schedule contained in the approved plan.

III. Notification Requirements for, and Assessment of, Newly Identified Releases From Previously Identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)

- A. The Permittee shall notify the Department and the United States Environmental Protection Agency (USEPA), in writing, no later than fifteen (15) days after discovery, or after discovery should have been made of any newly identified release(s) of hazardous waste, including hazardous constituents from previously identified SWMUs and/or AOCs, discovered during the course of groundwater monitoring, field investigation, environmental auditing, or other activities undertaken after issuance of this Permit.
- B. The Department may require a Newly Identified Release Work Plan for conducting an investigation of the newly identified release(s). Within thirty (30) days after receipt of notice that the Department requires a Newly Identified Release Work Plan, the Permittee shall submit a Newly Identified Release Work Plan which shall include a discussion of the waste/chemical management practices related to the release, a sampling and analysis program for groundwater, land surface and subsurface strata, surface water or air, as necessary to determine whether the release poses a threat to human health or the environment, and a proposed schedule for implementation and completion of the Newly Identified Release Work Plan. The sampling and analysis program shall be capable of yielding representative samples and must include monitoring parameters sufficient to assess the release of hazardous waste and/or hazardous constituents to the environment. The Newly Identified Release Work Plan shall identify any data to be collected to provide for a complete Newly Identified Release Report, as specified below and shall contain a schedule for implementation of the work plan which is predicated on the date of Departmental approval of the plan.
- C. The Department will review the Newly Identified Release Work Plan in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. The Permittee shall initiate and complete implementation in accordance with the schedule contained in the approved plan.

- D. The Permittee shall submit a Newly Identified Release Report to the Department and the USEPA according to the schedule specified in the approved Newly Identified Release Work Plan. The Newly Identified Release Report shall present and discuss the information obtained during implementation of the approved Newly Identified Release Work Plan. At a minimum, the report shall provide the following information for each newly identified release:
1. The location of the newly identified release in relation to other SWMU(s);
  2. The general dimensions of the release;
  3. The period during which the release is suspected to have occurred;
  4. The physical and chemical properties of all wastes that have been determined to comprise the release;
  5. The results of any sampling and analysis conducted;
  6. Past and present operating practices near and at the location of the release;
  7. Previous uses of the area(s) occupied near and at the location of the release;
  8. Amounts of waste handled near and at the location of the release; and
  9. Drainage areas and/or drainage patterns near and at the location of the release.
- E. The Department will review the Newly Identified Release Report in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. Based on the findings of the report and any other available information, the Department will determine the need for further investigation, including stabilization, a Resource Conservation and Recovery Act Facility Investigation, and/or a Corrective Measures Study.

IV. Interim/Stabilization Measures

Within sixty (60) calendar days after the effective date of this permit modification, the Permittee shall prepare and submit to the Department an interim groundwater monitoring plan for existing SWMUs specifying the wells to be monitored, the frequency of monitoring and the analytical parameter/methods based on the findings of the RFI, current site-specific conditions, and any newly identified contaminants from the April 2007 baseline groundwater sampling event. Additional groundwater monitoring may be necessary for any newly-identified SWMUs, AOCs, or releases from previously identified SWMUs/AOCs.

The interim groundwater monitoring plan will be reviewed in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Condition XIII. The Permittee shall initiate implementation of said plan within ninety (90) days of Departmental approval and shall continue groundwater monitoring in accordance with the approved interim groundwater monitoring plan until approval of a final remedy. At the time of final remedy approval, the Permittee's groundwater monitoring program may be modified to reflect the long-term strategy for demonstrating the effectiveness of the Permittee's groundwater corrective action program.

Upon approval of the Permittee's interim groundwater monitoring plan, groundwater-related information and analysis results collected pursuant to the approved interim groundwater monitoring plan shall be submitted as part of the Semi-Annual/Annual Groundwater Monitoring Reports as outlined in Special Permit Condition IX.F. and as required by Corrective Action Condition X.

These conditions apply to: current corrective action activities, activities undertaken in response to newly identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), and activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

- A. If the Permittee becomes aware of a situation that may require interim/stabilization measures to protect human health or the environment, the Permittee shall notify the Department within twenty-four (24) hours of the time the Permittee becomes aware or should have become aware of the situation.
- B. If during the course of any activity initiated under this Permit, the Permittee or the Department determines that a release or potential release of hazardous

waste, including hazardous constituents, poses a threat to human health or the environment, the Department may require interim/stabilization measures to slow or stop the further spread of contamination until final corrective action measures can be implemented. The Department will determine the specific action(s) that must be taken to implement interim/stabilization measures, including potential permit modifications and the schedule for implementing the interim/stabilization requirements and will inform the Permittee of decisions regarding the action(s) in writing. This requirement shall not preclude the Permittee from responding to an emergency situation without direction of the Department.

- C. If, at any time, the Permittee determines or should have known that the interim/stabilization measures program is not effectively limiting or stopping the further spread of contamination, the Permittee shall notify the Department in writing no later than ten (10) days after such a determination is made. The Department may require that the interim/stabilization measures program be revised to make it effective in limiting or stopping the spread of contamination; or that final corrective action measures are required to remediate the contaminated media.
- D. In cases where releases present minimal exposure concerns and/or the remedial solution is straightforward, the Permittee may propose interim/stabilization measures for review and approval by the Department. These interim/stabilization measures shall be consistent with and may supplement and/or satisfy the requirements for a final remedy(s) in specific areas.

V. Contingent Resource Conservation and Recovery Act Facility Investigation (RFI) Work Plan

These conditions apply to activities undertaken in response to newly identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) and also to activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

- A. If the Department determines that additional investigations are needed, the Department may require the Permittee to prepare and submit for approval an RFI Work Plan. The Permittee shall submit an RFI Work Plan to the Department and the United States Environmental Protection Agency within sixty (60) days of the notification of the requirement to conduct an RFI Work



Plan. The RFI Work Plan shall be designed to investigate releases of hazardous waste, including hazardous constituents, to all appropriate media of concern including soil, sediment, bedrock, groundwater, surface water, and/or air. In order to substantiate future corrective action decisions, the RFI Work Plan shall contain provisions which are sufficient to meet the following objectives and shall contain a schedule for implementation of the work plan which is predicated on the date of Departmental approval of the plan:

1. Full characterization of the nature, vertical and horizontal extent, and rate of migration of releases of hazardous waste and/or hazardous constituents from SWMUs and AOCs, or groups of SWMUs at the facility and the actual or potential receptors of such releases; and
  2. Collection of any other pertinent data that may be utilized to substantiate future corrective action decisions.
- B. The RFI Work Plan shall be appropriate for site-specific conditions and shall be consistent with and address all applicable investigation elements described in the most recent version (currently May 1989) of the EPA guidance document entitled, RCRA Facility Investigation Guidance; EPA 530/SW-89-031. At a minimum, the RFI Work Plan shall detail all proposed activities and procedures to be conducted at the facility, a description of current conditions, the schedule for implementing and completing such investigations, and for submission of reports (including the final RFI Report), the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI.
- C. The RFI Work Plan shall include a Quality Assurance Project Plan (QAPP). The QAPP shall present the policies, organization, objectives, functional activities, and specific quality assurance and quality control activities designed to achieve the data quality goals of the RFI. It shall include the RFI objectives, sampling procedures, analytical methods, field and laboratory quality control samples, chain-of-custody procedures and data review, validation and reporting procedures.
- D. The Permittee shall prepare and maintain a Health and Safety Plan during the project that assures the RFI activities are conducted in a manner that is protective of human health and the environment.

- E. Due to the complexity of defining the extent of contamination, the Permittee may be required to use a phased approach that requires the submittal of supplemental RFI Work Plans.
- F. The Department will review the RFI Work Plan(s) in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. The Permittee shall complete implementation in accordance with the schedules contained in the approved plan(s).

VI. Contingent Resource Conservation and Recovery Act Facility Investigation (RFI) Report

These conditions apply to activities undertaken in response to newly identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs) and also to activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

- A. The Permittee shall submit a RFI Report to the Department and the United States Environmental Protection Agency according to the schedule contained in the approved RFI Work Plan set forth in Corrective Action Permit Condition V. The RFI Report shall present all information gathered under the approved RFI Work Plan along with a brief facility description and map showing the property boundary and all SWMUs/AOCs. The RFI Report must contain adequate information to support further corrective action decisions at the facility. Information contained in the RFI Report shall be presented in a format that is consistent with Section 5 of the most recent version (currently May 1989) of the EPA Publication entitled, RCRA Facility Investigation Guidance; EPA530/SW-89-031.
- B. The RFI Report shall provide an interpretation of the RFI information gathered, supported with documentation, to enable the Department to determine whether additional stabilization and/or a Corrective Measures Study (CMS) may be necessary.

The RFI Report shall describe the procedures, methods, and results of all Investigations of SWMUs/AOCs and associated releases, including, but not limited to, the following, as appropriate:

1. Characterization of the nature, concentration(s), horizontal and vertical extent, and direction/rate of movement of releases from SWMUs/AOCs at the facility;
2. Characterization of the environmental setting of the facility, including:
  - a. Hydrogeological conditions;
  - b. Climatological conditions;
  - c. Soil and bedrock characteristics;
  - d. Surface water and sediment quality; and
  - e. Air quality and meteorological conditions.
3. Characterization of SWMUs/AOCs from which releases have been or may be occurring, including unit and waste characteristics;
4. Descriptions of human and environmental receptors and associated risks to the receptors which are, may have been, or, based on site-specific circumstances, could be exposed to release(s) from SWMUs/AOCs;
5. Assessment of potential risks to the human and environmental receptors exposed to release(s) from SWMUs/AOCs;
6. Extrapolations of future contaminant movement including description of contaminant fate and transport mechanisms, and pathways for human and environmental exposure;
7. Laboratory, bench-scale, pilot-scale and/or appropriate tests or studies to determine the feasibility or effectiveness of treatment technologies, or other technologies that may be appropriate in implementing remedies at the facility;
8. Statistical analyses to aid in the interpretation of data;
9. Results of any interim/stabilization measures previously implemented; and

10. Evaluation of data quality which may affect the nature and scope of a CMS, as well as the evaluation of corrective measures alternatives thereunder (e.g., identification of any potential bias in the RFI data, and documentation of its precision, accuracy, representativeness, completeness, comparability, validation, etc.)
- C. The Department will review the RFI Report in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. After review of the RFI Report, if the Department determines that the objectives of the RFI have not been met, the Department may require additional investigation. Upon approval of the RFI Report by the Department, the Department shall advise the Permittee as to the next step in the corrective action process that may include submittal of a CMS Work Plan pursuant to Corrective Action Permit Condition VII.

VII. Current and Contingent Corrective Measures Study (CMS) Plan

A CMS Plan was submitted in February 2001 for previously identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). These conditions apply to current corrective action activities, activities undertaken in response to newly identified SWMUs and AOCs, and activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

- A. If the Department determines that there has been a release of hazardous waste and/or hazardous constituents from a SWMU and/or AOC that may present a threat to human health or the environment, the Department may require a CMS Plan and will notify the Permittee in writing of this decision. This notice will identify the hazardous constituent(s) of concern and may specify remedial alternatives to be evaluated by the Permittee during the CMS Plan.
- B. The Department may require the Permittee to evaluate, as part of the CMS Plan, one or more specific potential remedies. These remedies may include a specific technology or combination of technologies that, in the Department's judgment, may be capable of achieving standards for protection of human health and the environment.
- C. The Permittee shall submit a CMS Plan to the Department and the United States Environmental Protection Agency within forty-five (45) days of notification of the requirement to conduct a CMS. The CMS Plan shall be consistent with guidance contained in the EPA document entitled: RCRA

Corrective Action Plan (Final), May 1994, OSWER Directive 9902.3-2A. At a minimum, the CMS Plan shall provide the following information and shall contain a schedule for implementation of the work plan which is predicated on the date of Department approval of the plan:

1. A description of the general approach to investigating and evaluating potential remedies;
  2. A definition of the specific objectives of the study;
  3. A description of the remedies which will be studied;
  4. A description of those potential remedies that were preliminarily considered, but were dropped from further consideration including the rationale for elimination;
  5. The specific plans for evaluating remedies to ensure compliance with remedy standards;
  6. The schedules for conducting the study and submitting a CMS Report;
  7. The proposed format for the presentation of information; and
  8. Laboratory, bench-scale, pilot-scale and/or appropriate tests or studies to determine the feasibility or effectiveness of treatment technologies, or other technologies that may be appropriate in implementing remedies at the facility.
- D. The Department will review any CMS Plan required by this Permit in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. The Permittee shall initiate implementation of the plan and complete implementation in accordance with the schedule contained in the approved plan.

#### VIII. Current and Contingent Corrective Measures Study (CMS) Report

A CMS Plan was submitted in February 2001 for previously identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs). These conditions apply to: current corrective action activities, activities undertaken in response to newly

identified SWMUs and AOCs, and activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

- A. The Permittee shall submit a CMS Report to the Department and the United States Environmental Protection Agency according to the schedule contained in the approved CMS Plan. The CMS Report shall present all information gathered under the approved CMS Plan and shall be consistent with guidance contained in the EPA document entitled, RCRA Corrective Action Plan (Final), May 1994, OSWER Directive 9902.3-2A. The CMS Report shall summarize the results of the investigations for each remedy studied and of any bench-scale or pilot tests conducted. The CMS Report shall include, but not be limited to, the following information:
1. Evaluation of performance, reliability, ease of implementation, and potential impacts of each remedy studied, including safety impacts, cross media impacts, and control of exposure to any residual contamination;
  2. Assessment of the effectiveness of each remedy in achieving adequate control of sources and cleanup of the hazardous waste or hazardous constituents released from the SWMU(s)/AOC(s);
  3. Assessment of the time required to begin and complete each remedy;
  4. Estimation of the costs of implementing each remedy;
  5. Recommendation of remedy and rationale for selection; and
  6. Assessments of institutional requirements, such as state or local permit requirements, or other environmental or public health requirements that may substantially affect implementation of the remedy.
- B. The CMS Final Report shall contain adequate information to support the Department in the remedy approval decision-making process.
- C. The Department will review the CMS Final Report in accordance with the procedures set forth in Review and Approval Procedures, Corrective Action Permit Condition XIII. Upon approval thereof by the Department, the Department will approve a final remedy as specified in Corrective Action Permit Condition IX.

IX. Final Remedy Approval

This corrective action Permit condition applies to: current corrective action activities, activities undertaken in response to newly identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), and activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

Following the approval of the CMS Final Report or equivalent, the Department will prepare a Statement of Basis (SB) summarizing the corrective measures alternatives that were evaluated by the Permittee, including justification for the proposed final remedy selected by the Department.

Following preparation of the SB by the Department, a permit modification will be initiated pursuant to 40 CFR 270.41 or 270.42(c), as applicable, to implement the final remedy.

Upon completion of the public participation activities associated with the permit modification to implement the proposed final remedy, the Department will approve a final remedy that will: 1) be protective of human health and the environment; 2) control and/or eliminate the source(s) of contaminants so as to reduce or eliminate, to the maximum extent practicable, further contaminant releases, exposures or migration that might pose a threat to human health and the environment; and 3) meet all applicable federal, state, and local laws and regulations.

X. Annual Progress Reports

These corrective action conditions apply to current corrective action activities, activities undertaken in response to newly identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), and activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

- A. The Permittee shall submit to the Department and the United States Environmental Protection Agency (USEPA) signed Annual Progress Reports summarizing all permitted corrective action activities undertaken during each calendar year. Each Annual Progress Report shall be due to the Department by March 1 of each calendar year for the preceding calendar year.

The Annual Progress Reports shall continue to be submitted until such time as the Permittee's corrective action activities (including any long-term operation, maintenance and monitoring activities) are complete. The Annual Progress

Reports shall include the following information for the time period being reported:

1. A description of the work completed;
  2. Summaries of all findings, including summaries of laboratory data;
  3. Summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;
  4. Projected work for the next reporting period; and
  5. Any instances of noncompliance with the corrective action requirements of this Permit not otherwise required to be reported elsewhere in this Permit.
- B. If the Department determines that further corrective action is required pursuant to Corrective Action Permit Conditions II. through X., the frequency of submittal of progress reports may increase. If an increase in reporting frequency is necessary, the Department will provide written notification of the new reporting frequency to the Permittee.

As part of any additional corrective action activities undertaken pursuant to this Permit, detailed technical information required to be submitted as part of interim/stabilization measures, Resource Conservation and Recovery Act Facility Investigation and/or Corrective Measures Study reports and work plans need not be reproduced as part of the Permittee's Progress Reports.

- C. Copies of other reports (e.g., inspection reports), information, or data shall be made available to the Department and USEPA upon request.

#### XI. Supplemental Data

This corrective action Permit condition applies to: current corrective action activities, activities undertaken in response to newly identified Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs), and activities undertaken in response to newly identified releases from previously identified SWMUs and AOCs.

All raw data, such as laboratory reports, drilling logs, bench- or pilot-scale data, and other supporting information gathered or generated during activities undertaken



pursuant to this Permit shall be maintained by the Permittee during the term of this Permit, including the term of any re-issued permits.

XII. Financial Assurance for Corrective Action

- A. Within one hundred and twenty (120) days after this Permit has been modified to include a final remedy, the Permittee shall demonstrate continuous compliance with the financial assurance requirements in effect at that time for corrective action being performed under state law. The effective financial assurance requirements for corrective action shall be consistent with and/or substantially equivalent to that specified in 40 CFR Part 264 Subpart H, as incorporated by reference in 10 CSR 25-7.264. The amount of financial assurance shall be based on the Permittee's cost estimate for the approved final remedy as contained in the approved Corrective Measures Study Final Report or equivalent.
- B. Annually, within sixty (60) days prior to the anniversary date of the financial assurance instrument, the Permittee shall adjust the corrective action cost estimate to account for inflation in accordance with 40 CFR 264.142(b) and any other changes in the costs associated with the implementation, operation, maintenance, and monitoring of the approved final remedy. If the cost estimate increases, documentation of adequate financial assurance for that increase shall be submitted to the Department within sixty (60) days following the increase in the cost estimate.

XIII. Review and Approval Procedures

Following submission of any plan or report pertaining to corrective action activities (excluding the Annual Progress Reports), the Department will review and either approve or disapprove the plan or report in writing. If the Department does not approve the plan or report, the Department will notify the Permittee in writing of the plan or report's deficiencies and specify a due date for submittal of a revised plan or report.

If the Department does not approve the revised plan or report, the Department may modify the plan or report and notify the Permittee of the modifications. The plan or report as modified by the Department is the approved plan or report.

If the Permittee disagrees with any Department-initiated plan or report modifications, and a mutually acceptable resolution of such modifications cannot be informally

reached, any appeal of the Department-initiated modifications shall be filed in accordance with Section 260.400, RSMo, and 10 CSR 25-8.

Should the Permittee require additional time to submit a scheduled document or perform other activities required by this Permit, the Permittee shall provide a written extension request to the Department at least fifteen (15) days prior to the scheduled due date of the document or activity. The Permittee's extension request shall specify the amount of additional time requested and shall be accompanied by the Permittee's justification for the extension. Review and approval of extension requests shall be in accordance with this Permit condition.

**FACILITY SUBMISSION SUMMARY**

**Table 2 - Planned Submittal Requirements  
 Pursuant to the Permit and Schedule of Compliance**

<b>Submittal Requirements</b>	<b>Due Date</b>	<b>Permit Condition</b>
Biennial Report with information required by 40 CFR 264.75	March 1 of each even numbered calendar year.	General Permit Condition I.
Certification that Permittee has read and understands this Permit and all modifications	Within 60 calendar days of effective date of Permit modification.	Schedule of Compliance Item I.A.
Check or money order for any outstanding engineering review costs	Within 60 calendar days of effective date of Permit modification.	Schedule of Compliance Item I.B.
Submit a revised SAP	Within 60 calendar days of effective date of Permit modification.	Schedule of Compliance Item I.C.
Submit an interim groundwater monitoring plan	Within 60 calendar days of effective date of Permit modification.	Schedule of Compliance Item I.D.
Submit a revised/updated Part A	Within 60 calendar days of effective date of Permit modification.	Schedule of Compliance Item I.E.
Submit a certification that all containment buildings meet permit requirements or a schedule to upgrade all containment buildings	Within 60 calendar days of effective date of Permit modification.	Schedule of Compliance Item I.F.
Submit a sampling plan for the Blast Furnace slag and settling basins	Within 60 calendar days of effective date of Permit modification.	Schedule of Compliance Item I.G.
Initiate installation of sealant in the Battery Bunker and Paste Storage Area	May 2008.	Schedule of Compliance Item III.
Submit design drawings and specifications for the Slag Storage Area Staging Bins	Within 150 calendar days of effective date of Permit modification.	Schedule of Compliance Item V.

<b>Submittal Requirements</b>	<b>Due Date</b>	<b>Permit Condition</b>
Original Financial Assurance Instruments	Prior to receipt of waste into the landfill.	Schedule of Compliance Item VI.C.
Increased Financial Responsibility for Nonsudden Occurrences	Prior to receipt of waste into the landfill.	Schedule of Compliance Item VI.D.
Notify the Department the Landfill has been Constructed in Accordance with Permit	15 days prior to receipt of waste into the landfill.	Special Permit Condition VI.C.13.
Agreement for Easement, Notice and Covenant Running with the Land	Prior to receipt of waste into the landfill.	Special Permit Condition VI.C.14.
Semi-Annual/Annual Groundwater Monitoring Report	September 1 and March 1 of each calendar year.	Special Permit Condition IX.F.
Corrective Measures Study (CMS) Report	In accordance with the schedule in the approved CMS Plan.	Corrective Action Permit Condition VIII.A.
Annual Progress Report	March 1 of each calendar year.	Corrective Action Permit Condition X.

**Table 3 - Summary of the Corrective Action Submittal Requirements Pursuant to the Contingent Corrective Action Conditions of this Permit**

<b>Contingent Submittal Requirements</b>	<b>Due Date</b>	<b>Corrective Action Condition</b>
Written Notification of Newly Identified SWMU(s) and AOC(s)	No later than 15 days after discovery.	II.A.
SWMU/AOC Assessment Work Plan	Within 30 calendar days of notice by the Department that a work plan is required.	II.B.
SWMU/AOC Assessment Report	In accordance with the schedule in the Assessment Work Plan.	II.D.
Written Notification of Newly Identified Releases from SWMU(s) and AOC(s)	No later than 15 days after discovery.	III.A.
Newly Identified Release Work Plan	Within 30 calendar days of notice by the Department that a work plan is required.	III.B.
Newly Identified Release Report	In accordance with the schedule in the approved Newly Identified Release Work Plan.	III.D.
Stabilization Notification	Within 24 hours of discovery of need for stabilization.	IV.A.
Stabilization Not Effective Notification	Within ten calendar days of determination by Permittee.	IV.C.
Contingent RCRA Facility Investigation (RFI) Work Plan	Within 60 calendar days of notice that the Plan is required.	V.A.
Contingent RCRA Facility Investigation (RFI) Report	In accordance with the schedule in the approved RFI Work Plan.	VI.A.
Contingent Corrective Measures Study (CMS) Work Plan	In accordance with the schedule in the approved RFI Report	VII.A.
Contingent Corrective Measures Study (CMS) Report	In accordance with the schedule in the approved CMS Plan.	VIII.A.

**Table N-1 - Summary of Solid Waste Management Units and Areas of Concern**

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**Please see hard copy or separate electronic file online at**  
**[dnr.mo.gov/env/hwp/permits/mod059200089/20010531-tablen1.pdf](http://dnr.mo.gov/env/hwp/permits/mod059200089/20010531-tablen1.pdf)**

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**FIGURES**

**Figure F-1 - Layout of the Buick Resource Recovery Facility**

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**[dnr.mo.gov/env/hwp/permits/mod059200089/20010601-figuref1.pdf](http://dnr.mo.gov/env/hwp/permits/mod059200089/20010601-figuref1.pdf)**

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**Figure N-1 - Locations of SWMUs and AOCs at the Buick Resource Recovery Facility**

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**Figure C-01 - Proposed Slag Storage Area**

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**Figure A-3 - Phase 7 Boundary**

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