INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
HAZARDOUS WASTE MANAGEMENT PERMIT

Name of Permittee: Heritage Environmental Services, LLC

Facility Location: 7901 West Morris Street, Indianapolis

EPA Identification Number: IND093219012

Issuance Date: ____________________________

Expiration Date: ____________________________

Authorized Activities

Pursuant to Indiana Environmental Statutes (IC 13) and the rules promulgated thereunder and codified in Title 329 of the Indiana Administrative Code, Article 3.1 (329 IAC 3.1), the State permit conditions (hereinafter called the permit) of the Resource Conservation and Recovery Act of 1976 (RCRA) permit are issued to Heritage Environmental Services, LLC (HES) (hereinafter called the Permittee) to operate a hazardous waste facility located in Indianapolis, Indiana, Section 15, Township 15 North, Range 2 East at latitude 39° 44' 520" and longitude 68° 18' 035" Clermont Quadrangle, on the U.S. Geological Survey topographic map.

The State RCRA program is authorized under 40 CFR Part 271 and Section 3006 of RCRA to administer the hazardous waste management program in lieu of the Federal program, including administration of most of the Hazardous and Solid Waste Amendments (HSWA) of 1984.
The Permittee is authorized to conduct the following hazardous waste management activities:

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<tr>
<th>STORAGE</th>
<th>TREATMENT</th>
<th>DISPOSAL</th>
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<tr>
<td>X Container</td>
<td>X Tank</td>
<td>Injection Well</td>
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<td>X Tanks</td>
<td>X Pug Mills, Filter Presses</td>
<td>Landfill</td>
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<td>X Containment</td>
<td>X Containment Buildings</td>
<td>Land Application</td>
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<tr>
<td>Buildings</td>
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Federal regulations 40 CFR Parts 260 through 270 have been incorporated by reference. Where exceptions to incorporated Federal regulations are necessary, these exceptions will be noted in the text of the State rule. 329 IAC 3.1-1-7

The conditions of this permit were developed in accordance with the following applicable provisions of 329 IAC 3.1:

- ID & Listing of Hazardous Waste
  329 IAC 3.1-6

- Standards for Owners and Operators of Treatment, Storage, and Disposal Facilities
  329 IAC 3.1-9
  40 CFR 264 Subparts A, B, C, D, and E

- Ground Water Protection
  329 IAC 3.1-9
  40 CFR 264 Subpart F

- Closure and Post-Closure
  329 IAC 3.1-9
  40 CFR 264 Subpart G

- Financial Requirements
  329 IAC 3.1-15
Use and Management of Containers
329 IAC 3.1-9
40 CFR 264 Subpart I

Tank Systems
329 IAC 3.1-9
40 CFR 264 Subpart J

Surface Impoundments
329 IAC 3.1-9
40 CFR 264 Subpart K

Waste Piles
329 IAC 3.1-9
40 CFR 264 Subpart L

Land Treatment
329 IAC 3.1-9
40 CFR 264 Subpart M

Landfills
329 IAC 3.1-9
40 CFR 264 Subpart N

Incinerators
329 IAC 3.1-9
40 CFR 264 Subpart 0

Corrective Action for Solid Waste Management Units
329 IAC 3.1-9
40 CFR 264 Subpart S

Drip Pads
329 IAC 3.1-9
40 CFR 264 Subpart W
Miscellaneous Units
329 IAC 3.1-9
40 CFR 264 Subpart X

Air Emission Standards for
Process Vents
329 IAC 3.1-9
40 CFR 264 Subpart AA

Air Emission Standards for
Equipment Leaks
329 IAC 3.1-9
40 CFR 264 Subpart BB

Air Emission Standards for Tanks
Surface Impoundments and Containers
329 IAC 3.1-9
40 CFR 264 Subpart CC

Containment Buildings
329 IAC 3.1-13
40 CFR 264 Subpart DD

Hazardous Waste Permit Programs
329 IAC 3.1-13
40 CFR 270 Subparts A, B, C, and D

Inspection and Investigation
329 IAC 3.1-1-3 and 329 IAC 3.1-1-4

Enforcement
329 IAC 3.1-1-5
Permit Approval

The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions contained herein (including those in any Attachments) and the applicable rules and requirements contained in 329 IAC 3.1 and 40 CFR 260 through 270 as specified in the permit. Applicable rules are those which are in effect on the date of issuance of this permit. (See 329 IAC 3.1-13; 40 CFR 270.32)

This permit is based on the assumption that the information submitted in the permit application attached to the Permittee's letter dated November 6, 2017, (VFC# 80564427) and subsequent amendments (VFC# 80637668) is accurate and that the facility has been or will be constructed and/or operated as specified in the application. The IDEM Virtual File Cabinet (VFC) may be viewed online from the IDEM homepage at www.IND.gov/idem.

Any inaccuracies found in the application may be grounds for the modification, revocation and reissuance, or termination of this permit (329 IAC 3.1-13-7), and potential enforcement action. The Permittee must inform the Indiana Department of Environmental Management (IDEM) of any deviation from, or changes in, the information in the application which would affect the Permittee's ability to comply with the applicable rules or permit conditions.

Pursuant to IC 13-15-5-3 and IC 4-21.5-3-5(f), this permit takes effect fifteen (15) days from receipt of this notice. If you wish to challenge this decision, IC 13-15-6-1 and IC 4-21.5-3-7 require that you file a Petition for Administrative Review. If you seek to have the effectiveness of the permit stayed during administrative review, you must also file a Petition for Stay. The petition(s) must be submitted to the Office of Environmental Adjudication, Government Center North, Room 103, 100 North Senate Avenue, Indianapolis, Indiana 46204, within fifteen (15) days after your receipt of this notice. The petition(s) must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision, or otherwise entitled to review by law. Identifying the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, or date of this notice will expedite review of the petition. Additionally, IC 13-15-6-2 requires that a Petition for Administrative Review must include:

1. The name and address of the person making the request.
2. The interest of the person making the request.
3. Identification of any persons represented by the person making the request.
4. The reasons, with particularity, for the request.
5. The issues, with particularity, proposed for consideration at the hearing.

6. Identification of the terms of the permit which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing licenses of the type granted or denied by the Commissioner.

Pursuant to IC 4-21.5-3-1(f), any document serving as a petition for review or review and stay must be filed with the Office of Environmental Adjudication. Filing of such a document is complete on the earliest of the following dates:

1. the date on which the petition is delivered to the Office of Environmental Adjudication, Government Center North, Room N103, 100 North Senate Avenue, Indianapolis, Indiana 46204;

2. the date of the postmark on the envelope containing the petition, if the petition is mailed by United States mail; or

3. the date on which the petition is deposited with a private carrier, as shown by a receipt issued by the carrier, if the petition is sent by private carrier.

The portions of the permit for which a Petition for Stay has been filed will take effect at the expiration of the additional fifteen (15) day period unless or until an Environmental Law Judge stays the permit in whole or in part. This permit shall remain in effect until five (5) years from the effective date unless revoked and reissued, modified, or terminated (329 IAC 3.1-13-7), or continued in accordance with IC 13-15-6-3.

This permit terminates and supersedes any other State hazardous waste management permit.

Issued this ______ day of ___________ 2019

By: ________________________________
Rebecca Eifert Jonskan, Chief
Permits Branch
Office of Land Quality
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I. STANDARD CONDITIONS

A. EFFECT OF PERMIT

The Permittee is allowed to treat and store hazardous waste in accordance with the conditions of the Hazardous Waste Management Permit. Any treatment or storage of hazardous waste not authorized in this permit or the regulations is prohibited.

1. Pursuant to 329 IAC 3.1 and 40 CFR 260 through 270 (for HSWA Provisions), compliance with the conditions of this Hazardous Waste Management Permit generally constitutes compliance for purposes of enforcement, with the Indiana Environmental Management Act and RCRA, as amended by HSWA, except for those requirements not included in the Permit which become effective by statute, or which are promulgated under 329 IAC 3.1 and 40 CFR Section 260 through 270, restricting the placement of hazardous wastes in or on the land.

2. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of Federal, State, or local laws or regulations.

3. Compliance with the terms of this permit does not constitute a defense to any Order issued or any action brought under Section 3013 or Section 7003 of RCRA; Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (42 U.S.C. 601), commonly known as CERCLA, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9606(a)), commonly known as SARA, or any other law providing for protection of public health or the environment. 329 IAC 3.1-13; 40 CFR 270.4; IC 13

B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 329 IAC 3.1-13-7. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee does not stay the applicability or enforceability of any permit condition.

C. SEVERABILITY

The provisions of the 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 will not be affected thereby. In the event that a condition of this permit is stayed for any reason, all provisions of the permit severable from the stayed provisions will take effect. With regard to stayed provisions of the permit, the Permittee shall continue to comply with the related applicable and relevant permitted standards in 329 IAC 3.1-9 and 329 IAC 3.1-15 from the previously issued permit until final resolution of the stayed condition, unless the Commissioner of the Indiana Department of Environmental Management (Commissioner) determines that compliance with the related applicable and relevant standards would be technologically incompatible with other conditions of this permit which have not been stayed. 329 IAC 3.1-13; 40 CFR 270.32

D. DUTIES AND REQUIREMENTS

1. **Duty to Comply**  The Permittee must comply with all conditions of the Hazardous Waste Management Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of IC 13 and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. 329 IAC 3.1-13; 40 CFR 270.30(a); 270.61

2. **Duty to Reapply**  The Permittee must submit a complete application for a new permit at least 180 days before this permit expires unless: a) the Permittee no longer wishes to operate a hazardous waste management facility and all remaining corrective action obligations have been met; or, b) permission for submittal on a later date has been granted by the Commissioner. The Commissioner shall not grant permission for applications to be submitted later than the expiration date of the existing permit. 329 IAC 3.1-13; 329 IAC 3.1-13-3(h)

3. **Permit Expiration**  The duration of this permit shall not exceed the expiration date of the permit, except as provided by 329 IAC 3.1-13-15. This permit and all conditions herein will remain in effect beyond the permit's expiration date if the Permittee has submitted a timely, complete application for a new permit and through no fault of the Permittee, the Commissioner has not issued a new permit with an effective date under 329 IAC 3.1-13-14 on or before the expiration date of the previous permit. 329 IAC 3.1-13-16

4. **Need to Halt or Reduce Activity Not a Defense**  It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to
halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. 329 IAC 3.1-13; 40 CFR 270.30(c)

5. **Duty to Mitigate**  In the event of non-compliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. 329 IAC 3.1-13; 40 CFR 270.30(d)

6. **Proper Operation and Maintenance**  The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit. 329 IAC 3.1-13; 40 CFR 270.30(e)

7. **Duty to Provide Information**  The Permittee shall furnish to the Commissioner, within a reasonable time, any relevant information which the Commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Commissioner, upon request, copies of records required to be kept by this permit. 329 IAC 3.1-13; 40 CFR 270.30(h); 264.74

8. **Inspection and Entry**  Permittee shall allow the Commissioner, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

   a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit (329 IAC 3.1-13; 40 CFR 270.30(i)(1));

   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit (329 IAC 3.1-13; 40 CFR 270.30(i)(2));

   c. Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit (329 IAC 3.1-13; 40 CFR 270.30(i)(3));
d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by IC 13, any substances or parameters at any location (329 IAC 3.1-13; 40 CFR 270.30(i)(4)).

9. Monitoring and Reporting

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from 329 IAC 3.1-6; 40 CFR 261, Appendix I. Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, (Third Edition as amended by updates) (as referenced in 40 CFR 260.11); Standard Methods for the Examination of Water and Wastewater, (the 19th Edition, 1995); or an equivalent method as specified in the attached Waste Analysis Plan. 329 IAC 3.1-13; 40 CFR 270.30(j)(1)

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, and records of all data used to complete the application for this permit for a period of at least 3 years from the date of the sample, measurement, report, or record or for a period of time greater than 3 years as specified elsewhere in this permit. This period may be extended by request of the Commissioner at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility. 329 IAC 3.1-13; 40 CFR 270.30(j)(2) and 40 CFR 264.74(b)

c. Records of monitoring information shall include:

i. The date(s), exact place, and times of sampling or measurements (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(i));

ii. The individual(s) who performed the sampling or measurements (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(ii));

iii. The date(s) analyses were performed (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(iii));
iv. The individual(s) and laboratory who performed the analyses (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(iv));

v. The analytical technique(s) or method(s) used. Analytical technique(s) or method(s) is defined as encompassing both the sampling technique (method) and method of chemical analysis used. This information must be provided in the Waste Analysis Plan (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(v)); and

vi. The result(s) of such analyses, including QA/QC documentation (329 IAC 3.1-13-1; 40 CFR 270.30(j)(3)(vi)).

d. Monitoring results shall be reported to the Commissioner at the intervals specified elsewhere in this permit. 329 IAC 3.1-13; 40 CFR 270.30(l)(4)

10. Reporting Planned Changes The Permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility. 329 IAC 3.1-13; 40 CFR 270.30(l)(1)

11. Certification of Construction or Modification The Permittee may not treat, store or dispose of hazardous waste in a modified portion of the facility except as provided in 40 CFR 270.42 until:

a. The Permittee has submitted to the Commissioner by certified mail or hand delivery a letter signed by the Permittee and a qualified professional engineer stating that the facility has been constructed or modified in compliance with the permit (329 IAC 3.1-13; 40 CFR 270.30(l)(2)(i)); and

The Commissioner has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit (329 IAC 3.1-13; 40 CFR 270.30(l)(2)(ii)(A)); or

Within 15 days of the date of submission of the letter described in I.D.11.a., the Permittee has not received notice from the Commissioner of his or her intent to inspect, prior inspection is waived and the Permittee may commence treatment, storage, or disposal of hazardous waste (329 IAC 3.1-13; 40 CFR 270.30(l)(2)(ii)(B)).

12. Transfer of Permits This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 329 IAC
3.1-13; 40 CFR 270.40(b) or 40 CFR 270.41(b)(2) to identify the new Permittee and incorporate such other requirements as may be necessary under IC 13. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator, in writing, of the requirements of 329 IAC 3.1 and IC 13, including all applicable corrective action requirements. 329 IAC 3.1-13; 40 CFR 270.40

13. Reporting Anticipated Noncompliance The Permittee shall give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. Such notification does not excuse the Permittee's duty to comply with permit requirements. 329 IAC 3.1-13; 40 CFR 270.30(l)(2)

14. Compliance Schedules Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date. 329 IAC 3.1-13; 40 CFR 270.30(l)(5)

15. Twenty-four Hour Reporting The Permittee shall report to the Commissioner any noncompliance with the permit which may endanger health or the environment. Any such information must be reported orally to IDEM 24 hour emergency telephone number (888) 233-7745, within 24 hours from the time the Permittee becomes aware of the circumstances. This report must include the following:

a. Information concerning the release of any hazardous waste which may endanger public drinking water supplies.

b. Information concerning the release or discharge of any hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of material(s) involved;

v. The extent of injuries, if any;
vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain: a description of the noncompliance and its cause; the period of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Permittee need not comply with the 5 day written notice requirement if the Commissioner waives the requirement and the Permittee submits a written report within 15 days of the time the Permittee becomes aware of the circumstances. 329 IAC 3.1-13-1; 40 CFR 270.30(l)(6)

16. Other Noncompliance The Permittee shall report all instances of noncompliance not otherwise required to be reported under Condition I.D.15., at the time monitoring reports, as required by this permit, are submitted. The reports shall contain the information listed in Condition I.D. 15. 329 IAC 3.1-13; 40 CFR 270.30(l)(10)

17. Other Information When the Permittee becomes aware that the facility failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Commissioner, the Permittee shall promptly submit such facts or information. 329 IAC 3.1-13; 40 CFR 270.30(l)(11)

18. Submittal of Reports or Other Information All reports or other information required to be submitted by the terms of this permit shall be sent to:

Indiana Department of Environmental Management Office of Land Quality Hazardous Waste Permit Section Attn: Chief Hazardous Waste Permit Section IGCN 1101 100 N. Senate Avenue Indianapolis, IN 46204
19. All other requirements contained in 40 CFR 270.30 not set forth herein are hereby fully incorporated in this permit.

E. SIGNATORY REQUIREMENT All reports or other information requested by the Commissioner shall be signed and certified as required by 329 IAC 3.1-13; 40 CFR 270.11.

F. CONFIDENTIAL INFORMATION The Permittee may claim confidential any information required to be submitted by this permit. Confidential claims must be submitted in accordance with 329 IAC 6.1. 329 IAC 3.1-13-4; 329 IAC 6.1; IC 13-14-11-1

G. WASTE MINIMIZATION The Permittee shall certify at least annually that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that the Permittee 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. The certifications shall be recorded, as they become available, and maintained in the operating record. 40 CFR 264.73(b)(9)

H. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE Except as noted in the regulations, until closure is completed and certified by the owner/operator and a qualified professional engineer, the Permittee must maintain at the facility the most recent version of the following documents required by this permit:

1. Waste Analysis Plan and any document(s) referenced therein to describe on-site procedures (329 IAC 3.1-9, 40 CFR 264.13);

2. Personnel Training documents and records (329 IAC 3.1-9, 40 CFR 264.16(d) and (e));

3. Contingency Plan (329 IAC 3.1-9, 40 CFR 264.53(a));

4. Closure Plan (329 IAC 3.1-9, 40 CFR 264.112(a)(2));

5. Cost estimate for facility closure (329 IAC 3.1-15-3);

6. Operating record (329 IAC 3.1-9, 40 CFR 264.73);

7. Inspection schedules (329 IAC 3.1-9, 40 CFR 264.15(b)(2));

8. Record of facility inspections kept for at least 3 years from the date of the inspection (329 IAC 3.1-9, 40 CFR 264.15(d));
9. Copies of all manifests for shipments of hazardous waste received at and originating from this facility, kept for at least 3 years (329 IAC 3.1-7, 329 IAC 3.1-9-2(6), 40 CFR 262.40, 40 CFR 264.71);

10. Notifications from generators subject to 40 CFR Part 268, Subtitle C, that specify treatment standards (40 CFR 264.73, 268.7);

11. Waste minimization certifications must be part of the operating record (40 CFR 264.73(b)(9)).

12. Corrective Action reports and records as required by Permit Condition VIII. of this permit, maintained for at least 3 years after all Corrective Action activities have been completed;

13. Records regarding closed-vent systems and control devices and/or equipment leaks as required by Permit Condition VII. of this permit.
II. GENERAL FACILITY CONDITIONS

A. DESIGN AND OPERATION OF FACILITY The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

(1) The Permittee shall notify the Commissioner in writing at least 4 weeks in advance of the date the Permittee expects to receive hazardous waste from a foreign source. Notice of subsequent shipments of the same waste having the same EPA hazardous waste number from the same foreign source is not required. 329 IAC 3.1-9, 40 CFR 264.12(a)

(2) When the Permittee is to receive hazardous waste from an off-site source (except where the Permittee is also the generator), it must inform the generator in writing that it has the appropriate permits for, and will accept, the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the operating record. (See Permit Condition II.J.1). 329 IAC 3.1-9, 40 CFR 264.12(b)

B. GENERAL WASTE ANALYSIS The Permittee must comply with the procedures described in the attached Waste Analysis Plan, Attachment C, which is incorporated herein by reference.

C. SECURITY The Permittee must comply with the security provisions described in the Procedures to Prevent Hazards, Attachment F, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.14(b) and (c)

D. GENERAL INSPECTION REQUIREMENTS The Permittee must follow the inspection schedule in the Procedures to Prevent Hazards, Attachment F. The Permittee must remedy any deterioration or malfunction discovered by an inspection. 329 IAC 3.1-9; 40 CFR 264.15(c)

E. PERSONNEL TRAINING The Permittee must conduct personnel training. This training program must follow the attached outline in the Personnel Training Plan, Attachment H, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.16

F. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE The Permittee shall comply with the requirements of 329 IAC 3.1-9 and 40 CFR 264.17.
G. PREPAREDNESS AND PREVENTION

1. Required Equipment The Permittee must equip the facility with the equipment set forth in the attached Contingency Plan, Attachment G, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.32

2. Testing and Maintenance of Equipment The Permittee must test and maintain the equipment specified in Attachment G (see the previous permit condition) as necessary to assure its proper operation in time of emergency. Such testing and maintenance activities are set forth in the inspection schedule in Attachment F. 329 IAC 3.1-9; 40 CFR 264.33

3. Access to Communications or Alarm System The Permittee must maintain access to the communications or alarm systems. 329 IAC 3.1-9; 40 CFR 264.34

4. Required Aisle Space The Permittee must maintain sufficient aisle space. 329 IAC 3.1-9; 40 CFR 264.35

5. Arrangements with Local Authorities The Permittee must attempt to make arrangements with State and local authorities. If State or local officials refuse to enter into preparedness and prevention arrangements, the Permittee must document this refusal in the operating record. 329 IAC 3.1-9; 40 CFR 264.37

H. CONTINGENCY PLAN

1. Implementation of Plan The Permittee must immediately comply with the provisions of the Contingency Plan, Attachment G, and follow the emergency procedures described by 329 IAC 3.1-9-2(3) and (4) and 40 CFR 264.56 whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which threatens or could threaten human health or the environment.

2. Copies of Plan The Permittee must maintain a copy of the Contingency Plan at the facility and submit a copy to all local police departments, fire departments, hospitals, and State and local emergency response teams that may be called upon to provide emergency services. 329 IAC 3.1-9; 40 CFR 264.53

3. Amendments to Plan The Permittee must review and immediately amend, if necessary, the Contingency Plan, when required by 329 IAC 3.1-9; 40 CFR 264.54.
4. **Emergency-Coordinator** The Permittee must comply with the requirements of 329 IAC 3.1-9 and 40 CFR 264.55, concerning the Emergency Coordinator.

I. **MANIFEST SYSTEM** The Permittee must comply with the manifest requirements. 329 IAC 3.1-9; 40 CFR 264.71; 264.72; 264.76

J. **RECORD KEEPING AND REPORTING** In addition to the record keeping and reporting requirements specified elsewhere in this Permit, the Permittee must comply with the following record keeping and reporting requirements:

1. **Operating Record** Maintain a written operating record at the facility in accordance with 329 IAC 3.1-9; 40 CFR 264.73.

2. **Sampling and Analysis Records** Keep original or exact copies of all sampling and analysis records available for inspection, 329 IAC 3.1-9; 40 CFR 264.74.

3. **Biennial Report** Comply with the biennial report requirements. 329 IAC 3.1-9; 40 CFR 264.75.

K. **CLOSURE**

1. **Performance Standard** The Permittee must close the facility as required by 329 IAC 3.1-9, 40 CFR 264.111 and the Closure Plan, Attachment I, which is incorporated herein by reference.

2. **Amendment to Closure Plan** The Permittee must amend the Closure Plan whenever necessary, and whenever requested by the Commissioner. 329 IAC 3.1-9; 40 CFR 264.112(c)

3. **Notification of Closure** The Permittee must notify the Commissioner in writing at least 45 days prior to the date on which he expects to begin final closure of a facility with only treatment or storage tanks, container storage, or incinerator units to be closed. 329 IAC 3.1-9; 40 CFR 264.112(d)

4. **Time Allowed for Closure** After receiving the final volume of hazardous waste, the Permittee must treat or remove from the site all hazardous waste in accordance with the schedule specified in the Closure Plan, Attachment I. After receiving the final volume of hazardous waste, the Permittee must complete closure activities in accordance with the schedule specified in the Closure Plan. 329 IAC 3.1-9; 40 CFR 264.113
5. **Disposal and/or Decontamination of Equipment** When closure is completed, the Permittee must properly decontaminate and/or dispose of all facility equipment contaminated with hazardous waste as required by the Closure Plan. 329 IAC 3.1-9; 40 CFR 264.114

6. **Certification of Closure** When final closure is completed, the Permittee and a qualified professional engineer must certify to the Commissioner that the facility has been closed in accordance with the specifications in the Closure Plan. 329 IAC 3.1-9; 40 CFR 264.115

   For a partial closure, the Permittee shall submit a permit modification no later than 45 days after certification approval that removes the unit from service, replaces the unit, proposes new unit to be permitted, or requests to the Commissioner that a time extension to submit the permit modification be granted for good cause.

L. **COST ESTIMATE FOR FACILITY CLOSURE** The Permittee's closure cost estimate, prepared in accordance with 329 IAC 3.1-15-3, is specified in the Closure Plan. The Permittee must comply with the following:

1. Adjust the closure cost estimate for inflation within 60 days prior to each anniversary date of the establishment of the financial instrument. 329 IAC 3.1-15-3(b).

2. When using the financial test or corporate guarantee, adjust the closure cost estimate for inflation within 30 days after the close of the Permittee's fiscal year and before the submission of updated information to the Commissioner. 329 IAC 3.1-15-3(b)

3. Revise the closure cost estimate whenever there is a change in the facility's closure plan. 329 IAC 3.1-15-3(c)

4. Keep at the facility the latest closure cost estimate. 329 IAC 3.1-15-3(d)

M. **FINANCIAL ASSURANCE FOR FACILITY CLOSURE** The Permittee must maintain financial assurance in at least the amount of the cost estimates required by Permit Condition I.I.L., and provide documentation as required. Changes in financial assurance mechanisms must be approved by the Commissioner. 329 IAC 3.1-15-4.

N. **INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS** The Permittee shall comply with 329 IAC 3.1-15-9 whenever necessary.
O. LIABILITY REQUIREMENTS The Permittee must maintain liability coverage for sudden accidental occurrences in the amount of at least $1 million per occurrence with an annual aggregate of at least $2 million, exclusive of legal defense costs. 329 IAC 3.1-15-8

P. LAND DISPOSAL RESTRICTIONS

1. The Permittee shall comply with all the applicable self-implementing requirements of 40 CFR Part 268 and all applicable land disposal requirements which become effective by federal statute.

2. The Permittee shall comply with the dilution prohibition requirements described in 40 CFR 268.3.

3. The Permittee shall comply with all testing, tracking, and recordkeeping requirements for treatment facilities described in 40 CFR 268.7.

4. The Permittee shall comply with all the applicable prohibitions on storage of restricted wastes specified in 40 CFR 268 Subpart E.

5. If the Permittee applies to the Administrator of the EPA for an exemption from land disposal restrictions described in 329 IAC 3.1-12-2, the Permittee must submit copies of such request and all supporting documents to the IDEM Commissioner. If the Permittee obtains an exemption from the Administrator of the EPA, the Permittee must apply to the Commissioner for concurrence that such an exemption is consistent with the policies outlined in IC 13.
III. CONTAINER STORAGE CONDITIONS

A. WASTE IDENTIFICATION

1. The Permittee may store the total volume of 214,660 gallons of wastes in containers subject to the terms of this permit of which 142,660 gallons of wastes with free liquids. (This volume does not include wastes stored in containers in Containment Buildings West and Rail, nor the capacity for CSAs 16-20. The capacities for CSAs 16-20 will be added to the permitted total upon completion of Permit Condition X.B.) See Table 1 below.

2. The Permittee is prohibited from storing hazardous waste that is not identified in Permit Condition IX.

B. UNIT LOCATION The container handling and storage units are located in Figure 1, Site Plan, Attachment G.

C. CONDITION OF CONTAINERS If a container holding hazardous waste is not in good condition (e.g., appreciable rusting, apparent structural defects) or if it begins to leak, the Permittee must transfer the hazardous waste from such container to a container that is in good condition or otherwise manage the waste in compliance with the conditions of this permit. 329 IAC 3.1-9; 40 CFR 264.171

D. COMPATIBILITY OF WASTE WITH CONTAINERS The Permittee must assure that the ability of the container to contain the waste is not impaired. 329 IAC 3.1-9; 40 CFR 264.172.

E. MANAGEMENT OF CONTAINERS

1. The Permittee shall manage containers as follows:

   (a) A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste. 329 IAC 3.1-9; 40 CFR 264.173(a)

   (b) A container holding hazardous waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak. 329 IAC 3.1-9 and 40 CFR 264.173(b)

   (c) Containers of 30 gallons or more must be stored so that they can be inspected for leaks and for deterioration caused by corrosion or other factors, without having to move the containers during the inspection and must have adequate aisle space between rows (approximately two and one-half feet (2 1/2)) to facilitate inspection.
### TABLE 1 - CONTAINER STORAGE Capacities

<table>
<thead>
<tr>
<th>Container Storage Area Identification</th>
<th>Location at Facility</th>
<th>Permit Storage Capacity (Gallons)</th>
<th>Permit Storage Capacity (55-gal drums)</th>
<th>Nominal Dimensions (in Feet)</th>
<th>Number of Constructed Bays</th>
<th>Free Liquids</th>
<th>Containment Volume Per Bay (Gallons)</th>
<th>Maximum Volume Per Bay (Gallons)</th>
<th>Maximum Container Size (55-gal drums)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Container Storage Area - 1</td>
<td>Inside Plant #1</td>
<td>25,740</td>
<td>292</td>
<td>60 X 30</td>
<td>5</td>
<td>Yes</td>
<td>3,039</td>
<td>6,078</td>
<td>52</td>
</tr>
<tr>
<td>Container Storage Area - 2</td>
<td>Inside Plant #1</td>
<td>17,150</td>
<td>188</td>
<td>60 X 30</td>
<td>6</td>
<td>Yes</td>
<td>3,039</td>
<td>6,078</td>
<td>52</td>
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<tr>
<td>Container Storage Area - 3</td>
<td>Inside Plant #2</td>
<td>18,260</td>
<td>70</td>
<td>60 X 21</td>
<td>5</td>
<td>Yes</td>
<td>1,260</td>
<td>2,520</td>
<td>52</td>
</tr>
<tr>
<td>Container Storage Area - 4</td>
<td>Inside Plant #2</td>
<td>17,270</td>
<td>152</td>
<td>60 X 21</td>
<td>4</td>
<td>Yes</td>
<td>1,260</td>
<td>2,520</td>
<td>52</td>
</tr>
<tr>
<td>Container Storage Area - 5</td>
<td>Inside Plant #1</td>
<td>12,050</td>
<td>200</td>
<td>32 X 30</td>
<td>5</td>
<td>Yes</td>
<td>75 per unit</td>
<td>150</td>
<td>12</td>
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<tr>
<td>Container Storage Area - 6</td>
<td>Inside Plant #1</td>
<td>7,200</td>
<td>127</td>
<td>30 X 21</td>
<td>5</td>
<td>Yes</td>
<td>75 per unit</td>
<td>150</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 7</td>
<td>Inside Plant #1</td>
<td>10,200</td>
<td>180</td>
<td>395 ft²</td>
<td>15</td>
<td>Yes</td>
<td>75 per unit</td>
<td>150</td>
<td>12</td>
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<tr>
<td>Container Storage Area - 8</td>
<td>Southwest Corner of Facility</td>
<td>72,000</td>
<td>1309</td>
<td>65 x 60</td>
<td>Yes</td>
<td>Not applicable</td>
<td>72,000</td>
<td>1309</td>
<td>12</td>
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<tr>
<td>Container Storage Area - 11</td>
<td>Inside Plant #2</td>
<td>12,930</td>
<td>368</td>
<td>(64 CY boxes)</td>
<td>1</td>
<td>Yes</td>
<td>3,196</td>
<td>12,930</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 12</td>
<td>Inside Plant #2</td>
<td>12,930</td>
<td>368</td>
<td>(64 CY boxes)</td>
<td>1</td>
<td>Yes</td>
<td>3,196</td>
<td>12,930</td>
<td>12</td>
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<tr>
<td>Container Storage Area - 13</td>
<td>Inside Plant #1</td>
<td>2,720</td>
<td>118</td>
<td>32 X 20</td>
<td>4</td>
<td>Yes</td>
<td>75 per unit</td>
<td>150</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 14</td>
<td>Inside Plant #1</td>
<td>10,680</td>
<td>66</td>
<td>59 X 25</td>
<td>4</td>
<td>Yes</td>
<td>75 per unit</td>
<td>150</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 15</td>
<td>Inside Plant #1</td>
<td>5,440</td>
<td>66</td>
<td>49 X 25</td>
<td>4</td>
<td>Yes</td>
<td>75 per unit</td>
<td>150</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 16</td>
<td>Inside Plant #3</td>
<td>32,540</td>
<td>368</td>
<td>462 ft²</td>
<td>8</td>
<td>Yes</td>
<td>846 ft²</td>
<td>846</td>
<td>12</td>
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<tr>
<td>Container Storage Area - 17</td>
<td>Inside Plant #3</td>
<td>146,290</td>
<td>368</td>
<td>1,196 ft²</td>
<td>30</td>
<td>Yes</td>
<td>2,040 roll per pallet</td>
<td>2,308</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 18</td>
<td>Inside Plant #1</td>
<td>33,320</td>
<td>588</td>
<td>860 ft²</td>
<td>49</td>
<td>Yes</td>
<td>75 per unit</td>
<td>150</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 19</td>
<td>Outdoors Plant #3</td>
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<td>368</td>
<td>462 ft²</td>
<td>8</td>
<td>Yes</td>
<td>846 ft²</td>
<td>846</td>
<td>12</td>
</tr>
<tr>
<td>Container Storage Area - 20</td>
<td>Outdoors Plant #3</td>
<td>130,500</td>
<td>368</td>
<td>1,196 ft²</td>
<td>1</td>
<td>Yes</td>
<td>Not applicable</td>
<td>32,540</td>
<td>12</td>
</tr>
</tbody>
</table>

**CONTAINER STORAGE CAPACITY (CSA 1 through 8, 11 through 20)**

- 589,060 Gal.

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(1) See Appendix CSP-A for location of unit at the facility.
(2) Determined by dividing Permit Storage Capacity (gallons) by 55. The listed number of containers is 55-gallon equivalents; the actual number of containers can be greater or lesser based on container sizes. Note: for areas using portable containment devices, the maximum number of 55-gallon containers is based on containment volume of the device. For example, a device with 880 gallons containment is sufficient for 12 containers with 55 gallons in volume each. Fifteen (15) such containment units in CSA 7 would equal 180 55-gallon containers.
(3) Additional information is provided in Exhibits 1 through 18 of Appendixes CSP-A and CSP-B.
(4) If a container storage area can manage free liquids, the area can also manage materials that do not contain free liquids.
(5) For CSA-1, CSA-2, CSA-3, CSA-4, CSA-5 and CSA-6 the ideal container arrangement is based on storing double stacked 55 gallon containers.
(6) For CSA-5, CSA-6, CSA-7, CSA-12, CSA-13, CSA-14, CSA-15 and sub-areas of CSA-16 the ideal container arrangement is based on storing single stacked 55 gallon containers.
(7) For Ultra-Stack Deck P6, P4, and/or P2, P6 is 30-gallon container stacked on 55-gallon containers (4 30-gallon containers and 4 55-gallon containers), P4 - 30-gallon container stacked on a 30-gallon container (6 30-gallon containers), and P2 - 15-gallon container stacked on a 15-gallon container (4 15-gallon containers). Current capacities of CSA 6, 7, 12-16 are based upon the current configuration of the modular containment devices specified in Exhibit 7 of Appendices A and B.
(8) For CSA-8 the ideal container arrangement is based on storing 12 roll-off boxes.
For CSA-11 the ideal container arrangements is based on storing double stacked cy boxes (64 total).
For CSA-19 and CSA-20 the ideal container arrangement is based on storing dump trailers, 2 and 8 respectively.
(9) Determined by dividing Maximum Volume per Bay (gallons) by 55. Ultra-Stack Deck P2 and P4 can only be used for 55-gallon containers when multiple sumps are connected. No 55-gallon containers may be stored on the module if the module is independent or connected to modules such that the combined sump capacity is less than 55 gallons.
(10) Any type, number, size, or configuration of container may be present as long as aisle space is approximately 2.6 feet, container stacking conforms with the permit requirements, and the largest container does not exceed the volume of secondary containment for the containers storage bay or portable unit, including configurations where multiple portable units have sumps connected.
(11) Based on combinations of Ultra-Stack Deck P6, P4, and/or P2. The P6 has 75-gallon containment capacity, P4 has a 35-gallon containment capacity, and the P2 has a 17.5-gallon containment capacity. If Portable Containment Devices are used, see Table CSP-3 for the individual capacities for these units.
(12) CSA 7, CSA 16, CSA 17, and CSA 18 are "L" shaped, see drawing in corresponding exhibits in Appendix CSP-B for area dimensions.
(13) CSA 16 is a rectangle, but is subdivided by a low wall resulting in two subareas. See drawing in Appendix CSP-B Exhibit 13 for subarea dimensions.
(14) Determined based on a dump trailer 8 feet x 39 feet x 7 feet, 16,320 gallons.
2. (a) The Permittee is allowed to "stage" incoming containerized wastes in designated areas. Incoming waste shall be placed in permitted units within 3 operating days of entering the facility boundary (or contiguous property controlled by the permittee) unless the Permittee rejects all or part of the shipment. In the case of rejected loads, the permittee shall have an additional 60 operating days to ship the waste off-site to an alternate TSDF or to the generator (40 CFR 264.72). During this time frame, the Permittee must ensure that the rejected load is maintained in a secure location and clearly labeled. "Operating day" is defined as any 24 hour period during which at least a partial shift is worked by employees who process, treat, place into storage, or dispose of hazardous waste at the facility. Wastes for which Heritage is the generator are subject to the requirements of 40 CFR 262, and not the time frames of this condition.

(b) Containerized waste being transferred from one permitted unit to another (such as from container storage to tank storage) shall remain outside of permitted units only for the minimum time necessary to move the containers and transfer the waste. In no instance shall this transfer period exceed 12 hours.

(c) Excluding generator wastes subject to 40 CFR 262 standards, more than 943,737 gallons of hazardous waste at any given time in permitted tanks, permitted container storage, and staging areas combined. All containers of waste at the facility shall be counted towards this capacity including, but not limited to, containerized waste in trucks, in trailers, on the loading docks, in permitted storage units, and in processing areas.

F. CONTAINMENT The Permittee must construct, operate, and maintain the containment system as specified in Process Information, Attachment D, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.175

G. INSPECTION The Permittee must inspect the container storage areas at least weekly, to detect leaking containers and deterioration of containers and the containment system, caused by corrosion or other factors. 329 IAC 3.1-9; 40 CFR 264.174.

H. SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE
Containers holding ignitable or reactive waste must be located at least 50 feet from the facility's property line. 329 IAC 3.1-9; 40 CFR 264.176.
I. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTE

1. Prior to placing incompatible waste or incompatible waste and materials in the same container, the Permittee must comply with 329 IAC 3.1-9 and 40 CFR 264.17(b) as specified in the Process Information, Attachment D. 329 IAC 3.1-9; 40 CFR 264.177(a)

2. The Permittee must not place hazardous waste in an unwashed container that previously held an incompatible waste or materials. 329 IAC 3.1-9; 40 CFR 264.177(b)

3. The Permittee must separate containers of incompatible wastes as indicated in the Process Information, Attachment D. 329 IAC 3.1-9; 40 CFR 264.177(c).

4. The Permittee must document compliance with Permit Condition III.I.3. and place this documentation in the operating record (Permit Condition II.J.1.).

J. CLOSURE REQUIREMENTS

1. At closure, all hazardous waste and hazardous waste residues must be removed from the containment system. Remaining containers, liners, bases, and soil containing or contaminated with hazardous waste or hazardous waste residues must be decontaminated or removed in accordance with the Closure Plan contained in Attachment I. 329 IAC 3.1-9; 40 CFR 264.178

2. At closure, as throughout the operating period, unless the Permittee can demonstrate in accordance with 329 IAC 3.1-9 and 40 CFR 261.3(d) that the solid waste removed from the containment system is not a hazardous waste, the Permittee becomes a generator of hazardous waste and must manage it in accordance with all applicable requirements of 329 IAC 3.1 and 40 CFR 262 through 266. 329 IAC 3.1-9; 40 CFR 264.178

3. Upon certification by the owner/operator and a registered professional engineer that part or all of the storage facility has been properly closed, those provisions of this permit which allow for the continued operation of the closed portion of the facility are terminated. The amount of wastes allowed to be stored is reduced to reflect the partial closure of this facility. Waste types which were only authorized for storage at the closed portion of the facility are deleted from this permit.
IV. TANK STORAGE CONDITIONS

A. WASTE IDENTIFICATION

1. The Permittee may store/treat the total volume of wastes in tanks listed in Table 2, subject to the terms of this permit.

<table>
<thead>
<tr>
<th>Tank</th>
<th>Group</th>
<th>Permitted Capacity (gals)</th>
<th>Fill rate (gpm)</th>
<th>Venting Rates (SCFH)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Aqueous Treatment System</td>
<td>11,002</td>
<td>575</td>
<td>704,820</td>
</tr>
<tr>
<td>D</td>
<td>Aqueous Treatment System</td>
<td>11,002</td>
<td>575</td>
<td>704,820</td>
</tr>
<tr>
<td>A</td>
<td>Aqueous Treatment System</td>
<td>11,544</td>
<td>430</td>
<td>412,020</td>
</tr>
<tr>
<td>CDU-1</td>
<td>Cyanide Destruction Units</td>
<td>1,460</td>
<td>325</td>
<td>n/a</td>
</tr>
<tr>
<td>CDU-2</td>
<td>Cyanide Destruction Units</td>
<td>3,455</td>
<td>325</td>
<td>n/a</td>
</tr>
<tr>
<td>50</td>
<td>Dry Bulk Solids Storage System</td>
<td>13,524</td>
<td>9.45 cfm</td>
<td>2125 - 2125</td>
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<tr>
<td>9</td>
<td>Mixed Waste Acid System</td>
<td>29,395</td>
<td>400</td>
<td>104,880</td>
</tr>
<tr>
<td>10</td>
<td>Mixed Waste Acid System</td>
<td>29,395</td>
<td>400</td>
<td>104,880</td>
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<tr>
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<td>Organic Oxidation System</td>
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<td>E1</td>
<td>Special Chemical Treatment System</td>
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<td>1990 - 1990</td>
</tr>
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<td>Waste Caustic Sludge System</td>
<td>32,344</td>
<td>430</td>
<td>261,000</td>
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<tr>
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<td>Waste Caustic Sludge System</td>
<td>32,344</td>
<td>430</td>
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<td>Waste Caustic Sludge System</td>
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</table>

| Total (permitted) | 732,832 |
| Total (current)   | 729,077 |

Venting Rates based upon API 2000 (inbreathing – outbreathing)

2. The Permittee is prohibited from storing hazardous waste that is not identified in Permit Condition IX.
B. **LOCATION OF TANKS**  The tanks are located in Figure 1, Site Plan, Attachment G.

C. **DESIGN OF TANKS**  The Permittee must construct, operate, and maintain all tanks as specified in the Tank Storage Plan, located in Attachment D, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.191 and 264.192.

D. **GENERAL OPERATING REQUIREMENTS**

1. The Permittee must not place hazardous wastes in the tank system if they could cause the tank, its ancillary equipment, or a containment system to rupture, leak, corrode, or otherwise fail. 329 IAC 3.1-9, 40 CFR 264.194(a)

Hazardous waste or treatment reagents must not be placed in a tank system if they could cause the tank system to rupture, leak, corrode, or otherwise fail within the projected life expectancy of the tank, to which the hazardous waste or treatment reagent is regularly and routinely exposed. The projected life expectancy is the time period in which the tank shell thickness is reduced to a point where it no longer meets industrial standards. The Permittee must be able to document and demonstrate, upon inspection by Agency representatives, compliance with the following:

The Permittee shall show compliance with 40 CFR 264.194(a) for tanks by maintaining minimum design shell and bottom plate thicknesses or other tank structural integrity maintenance mechanism based on accepted industrial tank standards such as American Petroleum Institute (API), American Society of Mechanical Engineers (ASME) or Underwriters Laboratory (UL). Compliance may be demonstrated by any of the following methods:

a. Routine and systematic tank wall thickness testing utilizing industrial standards and methodology conducted at a time interval of no more than 5 years between each testing.

b. Valid corrosivity testing data confirming that the waste or reagents in the tank will not cause failure within the projected life, based on the projected maximum corrosion rate.

c. Any other method which is determined to be essentially equivalent to either of the above methods and is an accepted industrial practice.
Tanks that fail any of the above test methods must be further assessed, removed from service and replaced, repaired, or serviced following the requirements of Section 4.8 of Attachment F.

2. The total normal venting capacity must be at least the sum of the venting requirements for solvent movement and thermal effect. The total inbreathing (vacuum) venting capacity must be as listed in Table 2. The actual capacity of the vent of the tanks at Heritage was calculated and included in the Tank Integrity Assessments.

3. The nominal input and output for the tank systems are listed in Table 2. The nominal fill rates listed in Table 2 must not be exceeded.

4. The Permittee must prevent spills and overflows from the tank or containment systems using the methods described in Procedures to Prevent Hazards, Attachment F. 329 IAC 3.1-9, 40 CFR 264.194(b)

E. SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTES

1. The Permittee must not place ignitable or reactive waste in a tank system or in the secondary containment system, unless the procedures described in Attachment D are followed. 329 IAC 3.1-9 and 40 CFR 264.198(a).

2. The Permittee shall document compliance with Permit Condition IV.E.1. and place this documentation in the operating record (Permit Condition II.K.1.). 329 IAC 3.1-9; 40 CFR 264.17(c)

3. The Permittee must comply with the requirements for the maintenance of protective distances between the waste management area and any public ways, streets, alleys, or an adjoining property line that can be built upon, as required in Tables 2-1 through 2-6 of the National Fire Protection Association's Flammable and Combustible Liquids Code. 329 IAC 3.1-9; 40 CFR 264.198(b))

F. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES

1. The Permittee must not place incompatible wastes in the same tank system or place hazardous waste in a tank system that previously held an incompatible waste or material unless the procedures specified in Attachment D are followed. 329 IAC 3.1-9, and 40 CFR 264.199(b).
2. The Permittee must document compliance with Permit Condition IV.F.1. and place this documentation in the operating record (Permit Condition II.K.1.). 329 IAC 3.1-9; 40 CFR 264.17(c)

G. CONTAINMENT AND DETECTION OF RELEASES

1. In order to prevent the release of hazardous waste or hazardous constituents to the environment, the Permittee must provide secondary containment as specified in the Tank Storage Plan Attachment D, which is incorporated herein by reference. 329 IAC 3.1-9; 40 CFR 264.193

2. In the event of a leak or a spill from the tank system, from a secondary containment system, or if a system becomes unfit for continued use, the Permittee must remove the system from service immediately and complete the following actions. 329 IAC 3.1-9; 40 CFR 164.196

For all major repairs to eliminate leaks or restore the integrity of the tank system, the Permittee must obtain a certification by a qualified professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner; repair of a ruptured tank; repair of a ruptured secondary containment vault; and replacement of a secondary containment vault.

H. INSPECTION SCHEDULES AND PROCEDURES

1. The Permittee must inspect the tank system, in accordance with Permit Attachment F.

2. The Permittee must inspect the overfill controls, in accordance with the schedule in Permit Attachment F. 329 IAC 3.1-9; 40 CFR 264.195(a)

3. The Permittee must inspect the following components of the tank system once each operating day (329 IAC 3.1-9; 40 CFR 264.195(b)):
   a. Aboveground portions of the tank system, if any, to detect corrosion or releases of waste;
   b. Data gathered from monitoring equipment (e.g., pressure or temperature gauges) to ensure that the tank system is being operated according to its design; and
   c. Construction materials and the area immediately surrounding the externally accessible portion of the tank system, including the
secondary containment system, to detect erosion or signs of releases of hazardous waste (e.g., wet spots).

4. The Permittee must document compliance with the above inspection requirements and place this documentation in the operating record for the facility. 329 IAC 3.1-9; 40 CFR 264.195(h)

I. RECORD KEEPING AND REPORTING

1. The Permittee must report to the Commissioner, within 24 hours of detection, when a leak or spill occurs from the tank system or secondary containment system to the environment. A leak or spill of one pound or less of hazardous waste immediately contained and cleaned-up need not be reported. If the Permittee has reported the release pursuant to 40 CFR Part 302, this report satisfies the requirements of this Permit Condition. 329 IAC 3.1-9; 40 CFR 264.196(d)(1)

2. Within 30 days of detecting a release to the environment from the tank system or secondary containment system, the Permittee shall report the following information to the Commissioner: (329 IAC 3.1-9; 40 CFR 264.196(d)(3))

   a. Likely route of migration of the release;
   b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);
   c. 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, provide the Commissioner with a schedule of when the results will be available before the required 30 day reporting period expires;
   d. Proximity of downgradient drinking water, surface water, and populated areas; and
   e. Description of response actions taken or planned.

3. The Permittee shall place all certifications of major repairs in the operating record which must be maintained until closure of the facility (329 IAC 3.1-9, 40 CFR Part 264.196(f)).

   The Permittee must submit to the Commissioner all certifications of major repairs within 7 days after returning the tank system to use.
J. CLOSURE REQUIREMENTS

1. At closure of a tank system, the Permittee must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, structures, and equipment contaminated with waste, and manage them as hazardous waste, unless the Permittee can demonstrate in accordance with 329 IAC 3.1-6 and 40 CFR 261.3(d) that the solid waste is not a hazardous waste. The procedures specified in the Closure Plan, Attachment I must be followed. 329 IAC 3.1-9; 40 CFR 264.197(a))

2. At closure or replacement of a tank or tanks within the tank system, the Permittee must remove or decontaminate all waste residues and contaminated containment system components (liners, etc.), and manage them as hazardous waste unless the Permittee can demonstrate in accordance with 329 IAC 3.1-6 and 40 CFR 261.3(d) that the solid waste is not a hazardous waste. The decontamination procedures in the Closure Plan, Attachment I must be followed.

3. If the Permittee demonstrates that not all contaminated soils can be practicably removed or decontaminated as required by Permit Condition IV.J.1., then the Permittee must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (329 IAC 3.1-9, 40 CFR 264.310). In addition, for the purposes of closure, post-closure and financial responsibility, such a tank system is then considered to be a landfill and the owner or operator must meet all of the requirements for landfills specified in 329 IAC 3.1-9, 329 IAC 3.1-15 and 40 CFR 264 Subpart G. 329 IAC 3.1-9; 40 CFR 264.197(b)
V. CONTAINMENT BUILDING STORAGE AND TREATMENT CONDITIONS

A. WASTE IDENTIFICATION

1. The Permittee may process in the Containment Buildings a total of 6,966 cubic yards per day of waste listed in Permit Condition IX. Containment Building West may store a maximum of 1,198 cubic yards and Containment Building Rail may store a maximum of 2,172 cubic yards.

2. The Permittee is prohibited from processing hazardous waste that is not identified in Permit Condition IX.

B. UNIT LOCATION

The location of the Containment Buildings is shown in Attachment G, Figure 1, Site Plan.

C. CONSTRUCTION / MAINTENANCE

The Permittee must maintain the Containment Buildings in accordance with the plans and specifications contained in Attachment D, Process Information.

D. DESIGN OF CONTAINMENT BUILDING

1. The Permittee must operate and maintain the Containment Buildings to prevent releases of hazardous wastes to the environment as specified in Attachment D, 329 IAC 3.1-9; 40 CFR 264.1101

2. The Permittee must operate and maintain the primary barrier, the liquids collection and removal system, and the secondary containment system of the Containment Buildings to prevent releases of hazardous wastes to the environment as specified in Attachment D. 329 IAC 3.1-9 and 40 CFR 264.1101(b). In the event of a release from the primary barrier to the secondary containment system, the Permittee must follow the procedures listed in Attachment D Containment Buildings – Design and Operation Information 40 CFR 1101 (c)(3)

E. GENERAL OPERATING REQUIREMENTS

The Permittee must maintain the containment building as follows:

1. Use controls and practices to ensure containment of the hazardous waste within the unit. 40 CFR 264.1101(c)(1)
2. Maintain the primary barrier to be free of significant cracks, gaps, corrosion or other deterioration that could cause hazardous wastes to be released from the primary barrier as specified in Attachment D. 40 CFR 264.1101(c)(1)(i)

3. Within the Containment Buildings, maintain the 5 foot aisle space/area around the openings (e.g., doors) free of stored or treated hazardous wastes and liquids. Wastes and liquids may be tracked within the buffer zone area, but quantities should be minimal. Heritage may wash the floors of the containment buildings, including the buffer zone, provided that the conditions in Attachment D are followed.

4. Take measures to prevent tracking hazardous waste out of the unit by personnel or by equipment used in handling the waste. Maintain an area designated to decontaminate equipment, and any rinsate must be collected and properly managed. 40 CFR 264.1101(c)(1)(iii)

5. Take measures to control fugitive dust emissions such that any openings (e.g., doors, windows, vents, cracks) exhibit no visible emissions. In addition, all associated particulate control devices must be operated and maintained with sound air pollution control practices. This state of no visible emissions must be maintained effectively at all times during the routine operating and maintenance conditions, including when vehicles and personnel are entering and exiting the unit as specified in Attachment D. 40 CFR 264.1101(c)(1)(iv)

6. Incompatible hazardous wastes or treatment reagents must not be placed into the Containment Buildings if they could cause the unit or its secondary containment system to leak, corrode or otherwise fail. 40 CFR 264.1101(a)(4)

F. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTES

1. The Permittee must not place incompatible wastes in the same area of the Containment Building or place hazardous waste in the same area of the Containment Building that previously held an incompatible waste or material unless the procedures specified in Attachment D are followed. 329 IAC 3.1-9; 246.17(b)

2. The Permittee must separate incompatible wastes and materials so that they cannot come into contact with each other. 40 CFR 64.17(b)
G. **CONTAINMENT AND DETECTION OF RELEASES**

1. The Permittee must operate and maintain the primary barrier and secondary containment system to prevent the release of hazardous wastes in accordance with the requirements of 329 IAC 3.1-9 and 40 CFR 264.1101(b), as specified in the Attachment D, Design and Operation of Containment Buildings, Sections 2 and 4 (Confidential).

2. In the event of a release from the primary barrier to the secondary containment system, the Permittee must follow the procedures listed in Attachment D, Design and Operation of Containment Buildings (Confidential).

H. **INSPECTION SCHEDULES AND PROCEDURES**

1. The Permittee must inspect and maintain the Containment Buildings and their associated containment systems in accordance with the schedules specified in Attachment F, Procedures to Prevent Hazards.

2. The Permittee must inspect and record in the facility's operating record, at least once every seven days, data gathered from monitoring equipment and leak detection equipment as well as the Containment Buildings and the area immediately surrounding the Containment Building to detect signs of release of hazardous wastes. 329 IAC 3.1-9; 40 CFR 264.1101(c)(4)

3. The Permittee must document compliance with Conditions V.H.1 and V.H.2 of this permit and place this documentation in the operating record for the facility. 329 IAC 3.1-9; 40 CFR 264.1101(c)(4)

I. **RECORDKEEPING AND REPORTING**

Throughout the active life of the Containment Buildings, if the Permittee detects a condition that could lead to or has caused a release of hazardous waste, the Permittee must repair the condition promptly. Attachment D details how the Permittee will detect a condition that could lead to or has caused a release of hazardous waste and how the Permittee will repair the condition.

J. **CLOSURE REQUIREMENTS**

1. At closure of the Containment Building, the Permittee must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated subsoils, and structures and equipment contaminated with waste and leachate, and manage them as
hazardous waste unless 40 CFR 261.3(d) applies. The closure of the Containment Building must be conducted in accordance with the procedures specified in the Closure Plan, Attachment I.

2. If, after removing or decontaminating all residues and making all reasonable efforts to effect removal or decontamination of contaminated components, subsoils, structures, and equipment as required under Condition V.J.1 of this permit, the Permittee finds that not all contaminated subsoils can be practically removed or decontaminated, the Permittee must close the facility and perform post-closure care in accordance with the closure and post-closure requirements that apply to landfills. (40 CFR 264.310)

In addition, for the purposes of closure, post-closure and financial responsibility, the Containment Building is then considered to be a landfill, and the Permittee must meet all of the requirements for landfills specified in Subparts G and H of 40 CFR 264.
VI. MISCELLANEOUS UNITS CONDITIONS

A. MISCELLANEOUS UNITS

1. FILTER PRESSES

The Permittee may store a total of 50 cubic yards of hazardous waste in each of the six (6) filter presses; and treat a combined total of 864 short tons per day of hazardous waste in the units; subject to the terms of this permit.

2. PUG MILLS

Once constructed in accordance with the Conditions X.1, the Permittee may store 56 cubic yards of hazardous wastes (112 cubic yards total) and may treat 12,000 short tons per day of hazardous wastes (24,000 short tons per day combined total) in each of the pug mill units; subject to the terms of this permit.

3. The Permittee is prohibited from storing or treating hazardous waste that is not identified in Permit Condition IX.

B. PERFORMANCE STANDARDS

1. The permittee must prevent any release from the miscellaneous units that may have adverse effects on human health or the environment due to migration of waste constituents in the groundwater or subsurface environment, in accordance with the methods specified in Permit Attachment D. 40 CFR 264.601(a)

2. The Permittee must prevent any release from the miscellaneous units that may have adverse effects on human health or the environment due to migration of waste constituents in surface water, or wetlands or on the soil surface, in accordance with the methods specified in Permit Attachment D. 40 CFR 264.601(b).

3. The Permittee must prevent any release from the miscellaneous units that may have adverse effects on human health or the environment. 40 CFR 264.601(c)
C. CONTAINMENT AND DETECTION OF RELEASES

1. In order to prevent the release of hazardous waste or hazardous constituents to the environment, the Permittee shall provide secondary containment.

2. In the event of a leak or a spill from a miscellaneous unit, 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 and inspect the system to determine the cause of the release.

b. Remove waste from the system within 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 to meet this time period, the Permittee shall notify the Commissioner and demonstrate that a longer time period is required.

   If the collected material is a hazardous waste, it must be managed in accordance with all applicable requirements. The Permittee shall note that if the collected material is discharged through a point source to U.S. waters or to a POTW, it is subject to requirements of the Clean Water Act. If the collected material is released to the environment, it may be subject to reporting under 40 CFR Part 302.

c. Contain visible releases to the environment. 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 and (2) remove and properly dispose of any visible contamination of the soil or surface water.

d. Close the system in accordance with the Closure Plan, Permit Attachment I, unless the following actions are taken:

   i. For a release caused by a spill that has not damaged the integrity of the system, the Permittee shall remove the released waste and make any necessary repairs to fully restore integrity of the system before returning the miscellaneous unit to service.
ii. For a release caused by a leak from the unit to the secondary containment system, the Permittee shall repair the unit prior to returning it to service.

e. For all major repairs to eliminate leaks or restore the integrity of the miscellaneous unit, the Permittee must obtain a certification by a qualified professional engineer that the repaired system is capable of handling hazardous wastes without release for the intended life of the system before returning the system to service. Examples of major repairs are: installation of an internal liner, repair of a ruptured miscellaneous unit, repair of a ruptured secondary containment vault, or replacement of a secondary containment vault.

D. INSPECTION SCHEDULES AND PROCEDURES

1. The Permittee must inspect the miscellaneous units in accordance with the inspection schedule in Attachment F, Procedures to Prevent Hazards.

2. The Permittee must document compliance with Permit Conditions VI.C.2.b. through VII.C.2.d. and place this documentation in the operating record for the facility.

E. RECORD KEEPING AND REPORTING

1. The Permittee shall report to the Commissioner, within 24 hours of detection, when a leak or spill occurs from a miscellaneous unit or secondary containment system to the environment. A leak or spill of one pound or less of hazardous waste, that is immediately contained and cleaned-up, need not be reported. If the Permittee has reported the release pursuant to 40 CFR Part 302, this report satisfies the requirements of this Permit Condition.

2. Within 30 days of detecting a release to the environment from a miscellaneous unit or secondary containment system, the Permittee shall report the following information to the Commissioner:

   a. Likely route of migration of the release;

   b. Characteristics of the surrounding soil (including soil composition, geology, hydrogeology, and climate);

   c. 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 should provide the Commissioner with a
schedule of when the results will be available. This schedule must be provided before the required 30 day submittal period expires;

d. Proximity of downgradient drinking water, surface water, and populated areas; and

e. Description of response actions taken or planned.

3. The Permittee must place in the operating record all certifications of major repairs to correct leaks prior to returning the miscellaneous unit to use.

F. CLOSURE REQUIREMENTS

1. At closure of a miscellaneous unit, the Permittee must remove or decontaminate all waste residues, contaminated containment system components (liners, etc.), contaminated soils, structures, and equipment contaminated with waste, and manage them as hazardous waste, unless 329 IAC 3.1-6 and 40 CFR 261.3(d) applies. The procedures are specified in the Closure Plan, Attachment I.

2. At closure or replacement of a miscellaneous unit, the Permittee must remove or decontaminate all waste residues and contaminated containment system components (liners, etc.); and manage them as hazardous waste unless 329 IAC 3.1-6 and 40 CFR 261.3(d) applies. The decontamination procedures in the Closure Plan, Attachment I shall be followed.

3. If the Permittee demonstrates that not all contaminated soils can be practicably removed or decontaminated as required in 329 IAC 3.1-9 and 40 CFR 264.197(e), then the Permittee must close the miscellaneous unit and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (329 IAC 3.1-9, 40 CFR 264.310). In addition, for the purposes of closure, post-closure and financial responsibility, such a tank system is then considered to be a landfill and the owner or operator must meet all of the requirements for landfills specified in 329 IAC 3.1-9, 329 IAC 3.1-15 and 40 CFR 264 Subpart G.
VII. AIR EMISSION STANDARD CONDITIONS

A. EQUIPMENT LEAKS

The Permittee must comply with all applicable requirements of 40 CFR Part 264, Subpart BB, regarding air emission standards for equipment as specified in Attachment D Subpart BB Air Emission Standards for Equipment Leaks.

B. TANKS AND CONTAINERS

The Permittee must comply with all applicable requirements of 40 CFR Part 264, Subpart CC, regarding air emission standards for (tanks, surface impoundments and/or containers).

1. FOR TANKS: Air pollutant emissions from tanks shall be controlled in accordance with Tank Level 1 controls as set forth in the Process Description, Attachment D – Air Emission Plan, Subpart CC Air Emission Standards. 40 CFR 264.1084

2. FOR CONTAINERS: Air pollutant emissions from containers shall be controlled in accordance with Container Level (1, 2, and/or 3) standards as set forth in the Process Description, Attachment D – Subpart CC Air Emission Standards for Tanks, Surface Impoundments and Containers. 40 CFR 264.1086

C. RECORDKEEPING

The Permittee must comply with all applicable recordkeeping and reporting requirements described in 40 CFR 264.1064, 264.1065, 40 CFR 264.1089, and 264.1090.

D. DUTY TO COMPLY WITH FUTURE REQUIREMENTS

The Permittee must comply with all self-implementing provisions of any future air regulations promulgated by RCRA, as amended by HSWA.
VIII. CORRECTIVE ACTION CONDITIONS

A. STANDARD REQUIREMENTS

1. Corrective Action At The Facility

In accordance with Section 3004(u) of RCRA (Indiana Code 13-22-2-5) and the regulations promulgated pursuant thereto, the Permittee must institute Corrective Action as necessary to protect human health and the environment for all releases of hazardous waste(s) or hazardous constituent(s) from any solid waste management unit (SWMU) or area of concern (AOC) at the facility, regardless of the time the waste was placed in such units.

2. Corrective Action Beyond The Facility Boundary

In accordance with Section 3004(v) of RCRA (Indiana Code 13-22-2-5) and the regulations promulgated pursuant thereto, the Permittee must implement Corrective Action(s) beyond the facility properly boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to IDEM's satisfaction that, despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all 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 addressed under the RCRA Facility Investigation, Corrective Measures Study, and Corrective Measures Implementation phases, as determined to be necessary on a case-by-case basis.

3. The Permittee may use the principles and procedures set forth in IDEM's 2012 Remediation Closure Guide, and all revisions and additions thereto, or other risk-based methodologies approved by IDEM's Office of Land Quality Permits Branch, as the basis for selecting risk-based endpoints that will be used for the investigations, studies, interim measures, and corrective measures under the permit. The Permittee must perform all such work in a manner consistent with, at a minimum, the Remediation Closure Guide.

4. Notification

a. Field Activities

The Permittee must notify IDEM at least 7 days before engaging in any field activities, such as well drilling, installation of equipment, or sampling. At IDEM's request, the Permittee must provide IDEM or its authorized representative split samples of all samples collected by the Permittee.
pursuant to this permit. Similarly, at the Permittee's request, IDEM will allow the Permittee or its authorized representatives to take split or duplicate samples of all samples collected by IDEM under this permit.

b. Submittals

One hard copy and one PDF copy on CD of all reports, plans, and other submissions relating to or required by this permit shall be sent to:

Indiana Department of Environmental Management
Hazardous Waste Permit Section
IGCN 1101
100 N. Senate Avenue
Indianapolis, IN 46204

B. IDENTIFICATION OF SWMUs

1. Definitions

a. "Area of Concern (AOC)" means a unit or area, existing or historical, that could potentially produce unacceptable exposures or be a potential source of ground water contamination, but the unit or area does not meet the definition of a solid waste management unit.

b. "Facility" means all contiguous property under the control of the owner/operator of a facility seeking a permit under RCRA Subtitle C.

c. "Hazardous waste," as defined in IC 13-11-2-99, means a solid waste or combination of solid wastes that may cause or significantly contribute to an increase in: mortality, serious irreversible illness, or an incapacitating reversible illness; or pose a substantial present or potential hazard to human health or the environment. This term is further defined in 40 CFR Part 261.3.


e. "Release" means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes or hazardous constituents into the environment, including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents.
f. "Solid waste" means any garbage, refuse, sludge, or other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, or agricultural operations or from community activities. This term is further defined in 40 CFR Part 261.2.

g. "Solid Waste Management Unit (SWMU)" means any discernable unit, permitted or unpermitted, existing or historical, 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.

2. SWMUs and AOCs Requiring Corrective Action

Based on the information contained in the administrative record, corrective action was required only at SWMUs 1, 2, and 3. Corrective action has been completed at these three SWMUs, see Attachment J, Section J-2a.

C. NEWLY IDENTIFIED SWMUs OR RELEASES

1. Notification Requirements

The Permittee shall notify IDEM, within 30 days of discovery, of the following information requirements for any new SWMU identified at the facility, in accordance with 329 IAC 3.1-13-1 and 40 CFR 270.14(d):

a. the location of the unit on the site topographic map;

b. designation of the type of unit;

c. general dimensions and structural description (supply any available drawings);

d. when the unit was operated; and

e. specifications of all waste(s) that have been managed at the unit.

2. Release Information

The Permittee must submit to IDEM, within 30 day of discovery, all available information pertaining to any release of hazardous waste(s) or hazardous constituent(s) from any new or existing SWMU.
3. Corrective Action

IDEM will review the information provided in Condition VIII.C.1. and 2. above, and may as necessary, require further investigations or corrective measures. The Permittee shall submit a written RFI Work Plan to IDEM in accordance with Condition VIII.D.2.

D. CORRECTIVE ACTION ACTIVITIES

The major tasks and required submittal dates are shown below. Additional tasks and associated submittal dates may also be specified in the Corrective Action Activities Schedule (Condition VIII.F.).

1. Interim Measures (IM)

   a. The Permittee may undertake interim measure activities to prevent or minimize the further spread of contamination while long-term remedies are pursued. An IM Work Plan must be submitted to IDEM for approval before the Permittee initiates any remedial activity. The interim measure(s) must be capable of being integrated into any long-term solution at the facility.

   b. While performing work pursuant to Permit Condition VIII.D.1., if the Permittee identifies an immediate threat to human health or the environment, the Permittee must immediately notify IDEM orally and in writing within 7 days summarizing the immediacy and magnitude of the potential threat to human health or the environment.

   This notification should be made to:

   Indiana Department of Environmental Management
   Office of Land Quality
   Attn: Chief Hazardous Waste Permit Section
   IGCN 1101
   100 North Senate Avenue
   Indianapolis, IN 46204
   800-451-6027 or 317-232-8603

   Upon receiving this information, IDEM will determine if an IM Work Plan is necessary. If one is necessary, IDEM will send a notice to the Permittee requiring the submission of an IM Work Plan. Within
21 days after receiving this notice, the Permittee shall submit to IDEM a work plan for approval that identifies the interim measure(s).

The work plan should be consistent with and integrated into any long-term solution at the facility. In addition, the following Interim Measure schedule shall be initiated:

i. Within 5 days of identifying an immediate threat to human health or the environment, the Permittee must provide an alternate water supply to parties that have a contaminated water supply well;

ii. Within 7 days of identifying an immediate threat to human health or the environment, the Permittee must submit a report to IDEM detailing the activity pursued and a plan for further Interim Measures activity;

iii. Within 7 days following IDEM's transmission of comments, the Permittee must revise the plan in accordance with the comments; and

iv. Within 7 days following IDEM's approval or modification of the plan, the Permittee must implement the revised plan in accordance with the schedule therein.

2. **RCRA Facility Investigation (RFI)**

   The Permittee must conduct an RFI to thoroughly evaluate the nature and extent of the release of hazardous waste(s) and hazardous constituent(s) from all SWMUs and AOCs identified as requiring an RFI.

   a. **RFI Work Plan**

      The Permittee must submit a written RFI Work Plan to IDEM within 90 days after written notification by IDEM that further investigation is necessary.

      IDEM will approve, modify and approve, or disapprove and provide comments on the work plan in writing to the Permittee. Within 60 days of receipt of such comments, the Permittee shall provide a response to IDEM's comments.
b. **RFI Implementation**

Within 30 days of IDEM’s written approval of the RFI Work Plan, the Permittee must implement the plan according to the terms and schedule contained therein.

c. **RFI Report**

Within 90 days after the completion of the RFI, the Permittee must submit an RFI Report to IDEM. The RFI Report must describe the procedures, methods, and results of the RFI. The report must contain adequate information to support further corrective action decisions at the facility. After the Permittee submits the RFI Report, IDEM will either approve or disapprove the report in writing. If IDEM disapproves the report, IDEM will notify the Permittee in writing of the deficiencies. The Permittee has 80 days after receipt of IDEM’s comments to submit a revised RFI Report to IDEM.

3. **Determination of No Further Action**

a. **Permit Modification**

After completion of the RFI, and based on its results and other relevant information, the Permittee may submit an application to IDEM for a permit modification under 40 CFR 270.42 to terminate the corrective action tasks of the Corrective Action Activities Schedule for all or a portion of the facility. Tasks identified in Permit Condition V.F. for the SWMUs, solid waste management areas (a group of SWMUs in an area to be addressed as a single unit), and/or the AOCs identified in the modification (for a determination of no further action) will be stayed pending a decision by IDEM. This permit modification must demonstrate that there are no releases of hazardous waste(s), including hazardous constituents, from SWMUs or AOCs that are the subject of the modification at the facility that pose a threat to human health or the environment.

If, based upon review of the Permittee’s request for a permit modification, the results of the completed RFI, and other information, IDEM determines that releases or suspected releases that were investigated either are nonexistent or do not pose a threat to human health or the environment, IDEM will grant the requested modification.
b. **Further Investigations**

A determination of no further action will not preclude IDEM from requiring further investigations, studies, or remediation at a later date, if new information (including different risk assumptions) or subsequent analysis indicates that a release or likelihood of a release from a SWMU or AOC at the facility is likely to pose a threat to human health or the environment. In such a case, IDEM will initiate a modification to the Corrective Action Activities Schedule to rescind the determination made in accordance with the above permit condition. Additionally, IDEM may determine that there is insufficient information on which to base a determination, and may require the Permittee to perform additional investigations as needed to generate the needed information.

4. **Corrective Measures Study (CMS) and Remedy Selection**

If IDEM determines, based on the results of the RFI and other relevant information, that corrective measures are necessary, IDEM will notify the Permittee in writing that the Permittee must conduct a CMS. The purpose of the CMS is to develop and evaluate the corrective action alternative(s) that will satisfy the performance objectives specified by IDEM. The CMS must be conducted within 60 days of notification by IDEM that the CMS is required. This period of time may be extended by IDEM if necessary to adequately complete the CMS. Note that this process can be significantly shortened by the selection of presumptive remedies (i.e., remedies that are known to be effective). Additional tasks and associated submittal dates may also be specified in the Corrective Action Activities Schedule (Condition VIII.F.).

a. **CMS Report**

Within 60 days after the completion of the CMS, the Permittee must submit a CMS Report to IDEM. The CMS Report must summarize the results of the investigations for each remedy studied and must include an evaluation of each remedial alternative. After the Permittee submits the CMS Report, IDEM will either approve, modify and approve, or disapprove the Report. If IDEM disapproves the report, IDEM will notify the Permittee in writing of the deficiencies. The Permittee has 60 days after receipt of IDEM’s comments to submit a revised CMS Report to IDEM. The CMS Report, as approved, becomes an enforceable condition of this permit.
b. **CMS Remedy Selection**

IDEIM will approve a corrective measure for implementation based on the following factors. The corrective measure selected for implementation must: (1) be protective of human health and the environment; (2) attain media cleanup standards; (3) control the source(s) of releases so as to reduce or eliminate further releases of hazardous waste(s) (including hazardous constituent(s)); (4) minimize the transfer of contamination from one environmental medium to another; and (5) comply with all applicable standards for management of wastes.

If two or more of the corrective measures studied meet the threshold criteria set out above, IDEIM will choose among alternatives for implementation by considering remedy selection factors including: (1) long-term reliability and effectiveness; (2) the degree to which the corrective measure will reduce the toxicity, mobility or volume; (3) the corrective measure's short-term effectiveness; (4) the corrective measure's implementability; and (5) the relative cost associated with the alternative. In selecting the corrective measure(s), IDEIM may also consider such other factors as may be presented by site-specific conditions.

5. **Permit Modification**

Within 30 days of IDEIM's selection of a corrective measure, the Permittee will initiate a permit modification, pursuant to 40 CFR 270.41 or 40 CFR 270.42, respectively, for the implementation of the corrective measure(s) selected. No permit modification fees are required for any modifications submitted under this condition.

6. **Corrective Measures Implementation (CMI)**

a. If the corrective measure(s) recommended in the Corrective Measures Study Report is (are) not the corrective measure(s) approved by IDEIM after consideration of public comments, IDEIM shall inform the Permittee in writing of the reasons for such decision. Within 30 days after the effective date of the permit modification, the Permittee shall implement the corrective measure(s).

b. **Financial Assurance**

As part of the permit modification of this permit to incorporate the CMI, the Permittee shall provide financial assurance in the amount
specified in IDEM-approved CMS Report as required by 40 CFR 264.101(b) and (c).

7. Incorporation of plans and reports

All approved plans and reports prepared for this permit will be incorporated into this permit on the date IDEM or his/her designee approves such plan or report.

E. CORRECTIVE ACTION ACTIVITIES SCHEDULE

<table>
<thead>
<tr>
<th>Activity</th>
<th>Due Date</th>
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<tr>
<td>1. IM Work Plan</td>
<td>21 days after notice by the IDEM</td>
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<td>2. RFI Work Plan</td>
<td>90 days after notice by IDEM</td>
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<td>3. Notification of newly identified SWMUs</td>
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<td>4. RFI Work Plan for newly identified SWMUs</td>
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<td>5. RFI Work Plan modification</td>
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<td>6. RFI Implementation</td>
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<td>7. RFI Report</td>
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<td>9. Progress Reports on Tasks I through IV</td>
<td>Annually of each year after effective date of permit</td>
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<td>10. CMS Report</td>
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<td>11. CMS Report modification</td>
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12. Permit Modification for Corrective Measure Implementation
   30 days after receipt of IDEM's notification (Modification may be a Class 1, 2, or 3 at IDEM's discretion)

13. CMI Program Plan
   30 days after effective date of permit modification

14. CMI Program Plan Modification
   30 days after receipt of IDEM's comments

15. CMI Reports
   Semi-annually; to coincide with ground water reporting, if possible

16. CMI Report Modification
   30 days after receipt of IDEM's comments

17. Operation and Maintenance Progress Reports
   Semi-annually; to coincide with ground water reporting, if possible

IDEM may, at the facility's request, grant extensions to the time frames listed in this section. IDEM-approved time extensions will not require a permit modification.
### IX. WASTE CODES TABLE

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<tr>
<td>P135</td>
<td>U038</td>
<td>U083</td>
<td>U127</td>
<td>U170</td>
<td>U217</td>
<td>U410</td>
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<tr>
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<td>U084</td>
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<td>U087</td>
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<tr>
<td>P140</td>
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<td>U088</td>
<td>U132</td>
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<tr>
<td>U001</td>
<td>U045</td>
<td>U089</td>
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<td>U177</td>
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</tr>
<tr>
<td>U002</td>
<td>U046</td>
<td>U090</td>
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<td>U178</td>
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<td>U047</td>
<td>U091</td>
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<td>U004</td>
<td>U048</td>
<td>U092</td>
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<td>U095</td>
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<tr>
<td>U008</td>
<td>U052</td>
<td>U096</td>
<td>U141</td>
<td>U184</td>
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<td></td>
</tr>
<tr>
<td>U009</td>
<td>U053</td>
<td>U097</td>
<td>U142</td>
<td>U185</td>
<td>U237</td>
<td></td>
</tr>
<tr>
<td>U010</td>
<td>U055</td>
<td>U098</td>
<td>U143</td>
<td>U186</td>
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<tr>
<td>U011</td>
<td>U056</td>
<td>U099</td>
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<td>U187</td>
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<td></td>
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<td>U057</td>
<td>U101</td>
<td>U145</td>
<td>U188</td>
<td>U240</td>
<td></td>
</tr>
</tbody>
</table>
X. COMPLIANCE SCHEDULE

A. For the following items that have not been constructed/installed (i.e., Pug Mill 1, Pug Mill 2 and Tanks CDU-2), the Permittee must do the following:

1. At least fourteen (14) days prior to beginning construction/installation of the unit, the Permittee must notify the IDEM of the anticipated installation date.

2. Within one (1) year of the beginning construction/installation, the Permittee must complete construction/installation of the unit.

3. Within fifteen (15) days after the construction/installation of each Pug Mill, the Permittee shall submit to the IDEM a letter stating the unit has been constructed/installed in accordance with Attachment D of this permit.

4. Within thirty (30) days from the installation of Tank CDU-2, the Permittee must perform the leak test and installation inspection of the tank in accordance with 40 CFR 264.192.

5. Within fifteen (15) days of completing the leak test and installation inspection on the Tank CDU-2, the Permittee must submit the results for IDEM approval.

6. If fifteen (15) days have passed since the Permittee notified IDEM in writing of the construction/installation of the unit, and IDEM has not indicated the need for an inspection or additional information, the Permittee is authorized to use the unit if Permit Condition X.A.7. has been met.

7. Within sixty (60) days after constructing the unit, the Permittee must update the closure cost estimates and provide additional financial assurance for the newly constructed unit. Once approved by IDEM, the plant capacity for the storage/treatment of wastes will be increased by the following amounts:

<table>
<thead>
<tr>
<th>Unit constructed/installed</th>
<th>Increase in Plant Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank CDU-2</td>
<td>Tanks: 2,615 gallons</td>
</tr>
<tr>
<td>Pug Mills (each)</td>
<td>Store: 56 yd³</td>
</tr>
<tr>
<td></td>
<td>Treat: 12,000 short tons/day</td>
</tr>
</tbody>
</table>
B. For the following items that have not been constructed (i.e., new CSA 16, 17, 18, 19 and 20) Heritage must do the following:

1. At least fourteen (14) days prior to beginning construction/installation of the unit, the Permittee must notify IDEM of the anticipated installation date.

2. Within one (1) year after beginning construction, the Permittee shall either complete construction/installation of the unit or provide IDEM with a status of the construction of the unit, including any problems encountered and an anticipated schedule for completion of construction.

3. The Permittee must notify IDEM in writing after the construction/installation of each of container storage area(s) is complete.

4. If fifteen (15) days have passed since the Permittee notified IDEM in writing of the construction/installation of the unit, and IDEM has not indicated the need for an inspection or additional information, the Permittee is authorized to use the unit if Permit Condition X.B.5. has been met.

5. Within sixty (60) days after constructing the unit, the Permittee must update the closure cost estimates and provide additional financial assurance for the newly constructed unit. Once approved by IDEM, the plant capacity for the storage/treatment of wastes will be increased by the following amounts:

<table>
<thead>
<tr>
<th>Unit constructed</th>
<th>Change in Plant Capacity (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA 16</td>
<td>32,680</td>
</tr>
<tr>
<td>CSA 17</td>
<td>145,200</td>
</tr>
<tr>
<td>CSA 18</td>
<td>33,320</td>
</tr>
<tr>
<td>CSA 19</td>
<td>32,640</td>
</tr>
<tr>
<td>CSA 20</td>
<td>130,560</td>
</tr>
</tbody>
</table>
ATTACHMENT A

PART A
The current Part A is maintained on file at the facility and may be found in IDEM’s Virtual File Cabinet, document # 80564427.
ATTACHMENT B

FACILITY DESCRIPTION
B-1 GENERAL DESCRIPTION

Heritage Environmental Services, LLC is a multi-operational, commercial treatment facility. The facility manages hazardous and non-hazardous wastes. Hazardous waste management capabilities of the facility include:

- Storage of hazardous waste in containers
- Storage of hazardous waste in tank systems
- Storage of hazardous waste in containment buildings
- Treatment of wastes in Subpart X Units
- Treatment of hazardous wastes in a tank based aqueous treatment system
- Treatment of hazardous wastes and debris in a containment building
- Treatment of hazardous wastes in containers
- Treatment of hazardous wastes in tanks using chemical oxidation
- Treatment of hazardous wastes in tanks using carbon adsorption
- Treatment of cyanide bearing hazardous wastes in a tank based proprietary cyanide destruction unit.
- Fuel blending and storage in tanks of organic materials acceptable for combustion in incinerators or boilers and industrial furnaces.

Related activities that are performed at the facility include:

- Depacking and repackaging of laboratory chemicals in permitted areas of the facility.
- Processor and transfer facility for Used Oil
- Brokering of hazardous and non-hazardous wastes to third party treatment storage and disposal facilities
- Reclamation of mercury bearing wastes
- 10–Day transfer station for hazardous waste destined to third party TSD's, where the facility is not the designated facility on the Uniform Hazardous Waste Manifest.
- Storage and treatment of non-hazardous industrial, commercial liquid and solid wastes.

Heritage serves all types of industries and commercial enterprises generating hazardous and non-hazardous waste.
B-2 TOPOGRAPHIC MAP

Following is a description of each map required for Section B-2. These maps are provided in the section entitled "Facility Maps."

B-2a General Map Requirements

Topographic Map

A topographic map was prepared for the Heritage Environmental Services, LLC facility in 1995 with modifications showing current site features. The map is entitled "Heritage Environmental Services, LLC Topographic Map". The scale of the map shown is 1 inch equal to 100 feet with a two-foot contour interval. The map provided was prepared in conformance for the National Map Accuracy Standards for the scale indicated. The horizontal datum of the map is based on the State Plane Coordinate System. The vertical datum of the map is based on the National Geodetic Vertical Datum (NGVD) established in 1929. The topographic map includes the Heritage Environmental Services, LLC property and extends 1000 feet beyond the property boundaries.

Floodplain

"Heritage Environmental Services, LLC, 100-Year Flood Plain" provides data identifying areas prone to flooding in the vicinity of the Heritage Environmental Services, LLC facility. Active management areas of the facility are not located in the 100-year floodplain as described in Section B-3b. The 100-year floodplain for the facility was established by the Federal Emergency Management Agency in January 2006.

Surface Waters/Surrounding Land Use/Legal Boundaries

The drawing entitled "Heritage Environmental Services, LLC Indianapolis, Indiana, Surface Waters and Surrounding Land Use", shows surface waters (creeks and surface impoundments) and surrounding land uses (industrial, commercial, undeveloped, and residential) based on aerial photography of the facility and surrounding area with field checks for update since 1995. The legal boundaries of the property are also provided on the drawing.

Security System and Internal Roads

The drawing entitled "Heritage Environmental Services, LLC, Indianapolis, Indiana, Security System and Internal Roads" shows the locations of perimeter gates, entry control systems, and danger signs denoting authorization for entry.

The drawing also shows the location of traffic safety signs (stop, yield, caution, speed limits, etc.), indicates the material of construction for all roads at the facility, and provides the normal traffic pattern at the facility.

Buildings and Structures; Loading and Unloading

The drawing entitled "Heritage Environmental Services, LLC Indianapolis, Indiana, Buildings and Structures, Loading and Unloading" shows the location of existing and proposed major buildings and structures at the facility including loading and unloading facilities. The drawing entitled "Heritage Environmental Services, LLC, Indianapolis, Indiana, RCRA Units Subject to Permit" designates the hazardous waste management units at the facility.
Fire Controls, Sewers, Potable Water, and Natural Gas

The drawing entitled "Heritage Environmental Services, LLC, Indianapolis, Indiana, Fire Controls, Sewers, Potable Water, and Natural Gas" shows the location of water mains and fire control system (excluding portable fire extinguishers identified in the Contingency Plan); storm sewers, potable water service, sanitary sewers; and natural gas facilities in the vicinity of the Heritage facility.

Solid Waste Management Units, Monitor Wells, and Boreholes

The drawing entitled "Heritage Environmental Services, LLC, Indianapolis, Indiana, Solid Waste Management Units, Monitor Wells and Boreholes" shows the location of solid waste management units at the facility. There are no monitor wells located at the facility. Soil borings have been installed at three Solid Waste Management Units. Additional information is provided in Attachment J of the permit.

Wind Rose

A wind rose from the Indianapolis International Airport is provided on the drawing entitled "Heritage Environmental Services, LLC, Indianapolis, Indiana, Wind Rose." The wind rose provided is for the year 1992.

B-2b Additional Map Requirements for Land Disposal Facilities

This section is not applicable because there are no land disposal facilities at Heritage Environmental Services, LLC in Indianapolis, Indiana.
B-3 SEISMIC AND FLOODPLAIN STANDARDS

B-3a Seismic Standard

The Heritage Environmental Services, LLC facility is not located in a political jurisdiction identified as seismically active per 40 CFR Part 264, Appendix VI.

B-3b Floodplain Standard

All active areas of the facility are located outside the 100-year flood plain as shown on the Drawing entitled, "Heritage Environmental Services, LLC, 100-Year Flood Plain." A copy of the Federal Insurance Rate Map Number 18097CO210 E dated January 1, 2001 in the vicinity of the facility is provided. Based on a flood study conducted in 1995 and confirmed by the Indiana Department of Natural Resources in 1995, the 100-year flood elevation was established at 767.0 NGVD. In January 2006, a Letter of Map Amendment issued by the Federal Emergency Management Agency adjusted the 100-year floodplain in the vicinity of the facility. A copy of the information provided by the Federal Emergency Management Agency removing portions of the 100-year floodplain from the Federal Insurance Rate Map at the facility is provided.
Federal Emergency Management Agency
Washington, D.C. 20472

January 31, 2006

Mr. Craig G. Hogarth, L.P.G.
Heritage Environmental Services
7901 West Morris Street
Indianapolis, IN 46231

Dear Mr. Hogarth:

This is in reference to a request that the Federal Emergency Management Agency (FEMA) determine if the property described in the enclosed document is located within an identified Special Flood Hazard Area, the area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood), on the effective National Flood Insurance Program (NFIP) map. Using the information submitted and the effective NFIP map, our determination is shown on the attached Letter of Map Amendment (LOMA) Determination Document. This determination document provides additional information regarding the effective NFIP map, the legal description of the property and our determination.

Additional documents are enclosed which provide information regarding the subject property and LOMAs. Please see the List of Enclosures below to determine which documents are enclosed. Other attachments specific to this request may be included as referenced in the Determination/Comment document. If you have any questions about this letter or any of the enclosures, please contact the FEMA Map Assistance Center toll free at (877) 336-2627 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, 3601 Eisenhower Avenue, Suite 130, Alexandria, VA 22304-6439.

Sincerely,

[Signature]

Doug Bellocco, P.E., Chief
Hazard Identification Section, Mitigation Division

LIST OF ENCLOSED:
LOMA DETERMINATION DOCUMENT (REMOVAL)

cc: State/Commonwealth NFIP Coordinator
Community Map Repository

MAP REDACTED FOR CLASSIFICATION PURPOSES BY HERITAGE

FILE COPY
Federal Emergency Management Agency  
Washington, D.C. 20472  

LETTER OF MAP AMENDMENT DETERMINATION DOCUMENT (REMOVAL)

<table>
<thead>
<tr>
<th>COMMUNITY</th>
<th>LEGAL PROPERTY DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>CITY OF INDIANAPOLIS, MARION COUNTY, INDIANA</td>
<td>A portion of Section 15, Township 15 North, Range 2 East, Second Principal Meridian, as described in the Corporate Quitclaim Deed recorded as Document No. 8901048555, and in the Corporate Warranty Deed recorded as Document No. 90-117502, both in the Office of the Recorder, Marion County, Indiana. The portion of property to be removed from the SFHA is more particularly described by the following metes and bounds:</td>
</tr>
</tbody>
</table>

### AFFECTED MAP PANEL

<table>
<thead>
<tr>
<th>NUMBER: 1807C0210E</th>
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</thead>
<tbody>
<tr>
<td>NAME: MARION COUNTY, INDIANA (ALL JURISDICTIONS)</td>
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<tr>
<td>DATE: 16/2001</td>
</tr>
</tbody>
</table>

### FLOODING SOURCE: JULIA CREEK

| APPROXIMATE LATITUDE & LONGITUDE OF PROPERTY: 38.747, -80.301 |
| SOURCE OF LAT & LONG: PRECISION MAPPING STREETS 4.0 DATUM: NAD 83 |

### DETERMINATION

<table>
<thead>
<tr>
<th>LOT</th>
<th>BLOCK/SECTION</th>
<th>SUBDIVISION</th>
<th>STREET</th>
<th>OUTCOME WHAT IS REMOVED FROM THE SFHA</th>
<th>FLOOD ZONE</th>
<th>1% ANNUAL CHANCE FLOOD ELEVATION (NGVD 29)</th>
<th>LOWEST ADJACENT GRADE ELEVATION (NGVD 29)</th>
<th>LOWEST LOT ELEVATION (NGVD 29)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>7901 West Morris Street</td>
<td>Portion of Property (unshaded)</td>
<td>X</td>
<td>767.5 feet</td>
<td></td>
<td>767.5 feet</td>
</tr>
</tbody>
</table>

**Special Flood Hazard Area (SFHA)** - The SFHA is an area that would be inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood).

**ADDITIONAL CONSIDERATIONS** (Please refer to the appropriate section on Attachment 1 for the additional considerations listed below.)

**LEGAL PROPERTY DESCRIPTION**

This document provides the Federal Emergency Management Agency's determination regarding a request for a Letter of Map Amendment for the property described above. Using the information submitted and the effective National Flood Insurance Program (NFIP) map, we have determined that the described portion(s) of the property is/are not located in the SFHA, an area inundated by the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood). This document encodes the effective NFIP map to remove the subject property from the SFHA located on the effective NFIP map; therefore, the Federal mandatory flood insurance requirement does not apply. However, the lender has the option to continue the flood insurance requirement to protect its financial risk on the loan. A Preferred Risk Policy (PRP) is available for buildings located outside the SFHA. Information about the PRP and how one can apply is enclosed.

This determination is based on the flood data presently available. The endorsed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at (877) 336-2027 (877-FEMA MAP) or by letter addressed to the Federal Emergency Management Agency, 3501 Eisenhower Avenue, Suite 130, Alexandria, VA 22304-6459.

---

Doug Bellomo, P.E., Chief  
Hazard Identification Section, Mitigation Division

Version 1.3.3  
1069789.1LOMA-SL065560704
LETTER OF MAP AMENDMENT
DETERMINATION DOCUMENT (REMOVAL)
ATTACHMENT 1 (ADDITIONAL CONSIDERATIONS)

LEGAL PROPERTY DESCRIPTION (CONTINUED)

COMMENCING at the Northwest corner of said Northwest Quarter of Section 15, 185.35 feet East of the Northwest corner of the Quarter Section; thence S0°00'09"W, 764.36 feet to the POINT OF BEGINNING; thence N88°47'10"E, 33.15 feet; thence 38.19 feet along a curve with a radius of 22.09 feet and a chord length bearing of S64°02'23"E, a distance of 33.56 feet; thence 19.05 feet along a curve with a radius of 31.31 feet and a chord length bearing of N46°05'44"E, a distance of 19.76 feet; thence 13.41 feet along a curve with a radius of 15.22 feet and a chord length bearing of N56°53'52"E, a distance of 12.98 feet; thence N73°15'45"E, 57.13 feet; thence N04°25'56"E, 119.55 feet; thence N79°08'52"E, 65.40 feet; thence N70°23'07"E, 44.29 feet; thence N73°22'18"E, 60.46 feet; thence N90°00'00"E, 36.83 feet; thence S47°52'28"E, 21.99 feet; thence S00°00'00"E, 44.24 feet; thence S50°38'14"W, 162.07 feet; thence S00°00'00"W, 31.05 feet; thence S33°18'50"E, 31.82 feet; thence S90°00'00"E, 26.12 feet; thence S90°00'00"W, 38.03 feet; thence S49°24'39"W, 21.47 feet; South 90°00'00"W, 57.46 feet; thence S59°59'47"W, 70.18 feet; thence S77°59'31"W, 20.25 feet; thence S29°57'33"W, 67.64 feet; thence S90°00'00"W, 24.07 feet; thence N45°00'44"W, 19.76 feet; thence N00°00'00"W, 54.33 feet; thence North 90°00'00"W, 23.95 feet; thence S47°11'07"W, 187.34 feet; thence S29°51'23"W, 40.90 feet; thence S52°55'45"W, 75.11 feet; thence N90°00'00"W, 59.35 feet; thence N45°03'47"W, 32.67 feet; thence N00°03'24"W, 401.67 feet; thence S89°11'05"E, 103.35 feet to the POINT OF BEGINNING.

PORTIONS OF THE PROPERTY REMAIN IN THE SFHA (This Additional Consideration applies to the preceding 1 Property.)

Portions of this property, but not the subject of the Determination/Comment document, may remain in the Special Flood Hazard Area. Therefore, any future construction or substantial improvement on the property remains subject to Federal, State/Commonwealth, and local regulations for floodplain management.

ZONE A (This Additional Consideration applies to the preceding 1 Property.)

The National Flood Insurance Program map affecting this property depicts a Special Flood Hazard Area that was determined using the best flood hazard data available to FEMA, but without performing a detailed engineering analysis. The flood elevation used to make this determination is based on approximate methods and has not been formalized through the standard process for establishing base flood elevations published in the Flood Insurance Study. This flood elevation is subject to change.

STUDY UNDERWAY (This additional consideration applies to all properties in the LOMA DETERMINATION DOCUMENT (REMOVAL))

This determination is based on the flood data presently available. However, the Federal Emergency Management Agency is currently revising the National Flood Insurance Program (NFIP) map for the community. New flood data could be generated that may affect this property. When the new NFIP map is issued it will supersede this determination. The Federal requirement for the purchase of flood insurance will then be based on the newly revised NFIP map.

This attachment provides additional information regarding this request. If you have any questions about this attachment, please contact the FEMA Map Assistance Center toll free at (877) 398-2627 (877-FEMA-MAP) or by letter addressed to the Federal Emergency Management Agency, 3601 Eisenhower Avenue, Suite 120, Alexandria, VA 22334-3439.
B-4 TRAFFIC INFORMATION

Heritage Environmental Services, LLC provides commercial, storage, and treatment services. Heritage Transportation, LLC and third party vehicles enter and leave the facility each day. Traffic patterns are provided on the drawing entitled "Heritage Environmental Services, LLC, Indianapolis, Indiana Security System and Internal Roads".

Vehicular traffic hauling hazardous waste to and from the facility consists of bulk liquid tankers, roll-off boxes, vans, pneumatic tankers, vacuum trucks, dump trailers, and similar over-the-road commercial hauling equipment. The estimated number of hazardous waste hauling vehicles entering and leaving the facility is approximately fifty per day.

Internal roads at the facility are covered with asphalt pavement with an aggregate subgrade or concrete pavement that is adequate for the imposed loads of the vehicles present at the facility.
B-5 OPERATING RECORD

As a permitted facility that stores and treats hazardous waste, Heritage must maintain a facility operating record. The following table states the required elements of the operating record and the periods required for record retention for the Heritage Treatment Storage and Disposal facility and for hazardous waste generated by Heritage.

<table>
<thead>
<tr>
<th>OPERATING RECORD REQUIREMENTS FOR TSD</th>
<th>RETENTION PERIOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description and the quantity of each hazardous waste received, and the method and date(s) of its treatment storage and disposal as required by 40 CFR Part 264 Appendix I</td>
<td>Until closure of the facility</td>
</tr>
<tr>
<td>The location of each hazardous waste within the facility and the quantity at each location, including cross references to manifest document numbers if accompanied by a manifest</td>
<td>Until closure of the facility</td>
</tr>
<tr>
<td>Records documenting personnel training that include job titles for each position, written job descriptions, a description of the type and amount of introductory and continuing training required, and records documenting that the training and experience required have been given to and been completed by facility personnel per 40 CFR Part 264.16.</td>
<td>Until closure of the facility for current employees. Former employees records must be kept for a period of three years from the date the employee last worked at the facility.</td>
</tr>
<tr>
<td>Records and results of waste analysis performed as specified in 40 CFR Parts 264.13, 264.73(b)(3) General Waste Analysis 264.17, 264.73(b)(3) General Requirements for Ignitable, Reactive, or Incompatible Wastes 264.314 Not applicable to the facility 264.341 Not applicable to the facility 264.1034 Test Methods and Procedures (40 CFR Part 264 Subpart AA) 264.1063 Test Methods and Procedures (40 CFR Part 264 Subpart BB) 268.4(e) Not applicable to the facility 268.7, 264.73(b)(3) Waste analysis and recordkeeping</td>
<td>Not applicable to this facility Not applicable to this facility Not applicable to this facility Not applicable to this facility Not applicable to this facility 3 Years from Date of Analysis 3 Years from Date of Analysis 3 Years from Date of Analysis 3 Years from Date of Analysis</td>
</tr>
<tr>
<td>Summary reports and details of all incidents that require implementation of the facility contingency plan as specified in 40 CFR Part 264.56(j), 264.73(b)(4)</td>
<td>3 Years from Date of Incident</td>
</tr>
<tr>
<td>Records and results of inspections as required by 40 CFR Part 264.15(d), 264.73(b)(5)</td>
<td>3 years from the date of the inspection</td>
</tr>
<tr>
<td>Monitoring, testing, or analytical data and corrective action where required by 40 CFR Parts 40 CFR 264 Releases from Solid Waste Subpart F Management Units</td>
<td>Until closure of facility</td>
</tr>
<tr>
<td>264.19 Construction Quality Assurance Program</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.191, 264.73(b)(6) Assessment of Existing Tank Systems Integrity (Subpart J)</td>
<td>Until closure of the facility</td>
</tr>
<tr>
<td>264.193, 264.73(b)(6) Containment and Detection of Releases (Subpart J)</td>
<td>Until closure of the facility</td>
</tr>
<tr>
<td>264.195, 264.73(b)(6) Inspections (Subpart J)</td>
<td>Until closure of the facility</td>
</tr>
<tr>
<td>OPERATING RECORD REQUIREMENTS FOR TSD</td>
<td>RETENTION PERIOD</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------</td>
</tr>
<tr>
<td>264.196(f) Certification of major repairs</td>
<td>Until closure of the facility</td>
</tr>
<tr>
<td>264.222 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.223 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.226 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.252 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.253 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.254 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.276 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.278 Not applicable to the facility</td>
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</tr>
<tr>
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</tr>
<tr>
<td>264.302 Not applicable to the facility</td>
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<tr>
<td>264.303 Not applicable to the facility</td>
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<tr>
<td>264.304 Not applicable to the facility</td>
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<td>264.309 Not applicable to the facility</td>
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<tr>
<td>264.347 Not applicable to the facility</td>
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<tr>
<td>264.602 Not applicable to the facility</td>
<td>Not applicable to this facility</td>
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<tr>
<td>264.1034(c) (f) Test Methods and Procedures (40 CFR Part 264 Subpart AA)</td>
<td>Not applicable to this facility</td>
</tr>
<tr>
<td>264.1035 Recordkeeping requirements (40 CFR Part 264 Subpart AA)</td>
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</tr>
<tr>
<td>264.1063(d) (i), 264.73(b)(6) Test Methods and Procedures (40 CFR Part 264 Subpart BB)</td>
<td>3 Years from Date of Analysis</td>
</tr>
<tr>
<td>264.1064, 264.73(b)(6) Recordkeeping requirements (40 CFR Part 264 Subpart BB)</td>
<td>Until closure of the facility for 40 CFR Part 264.1064 (a)-(c) and (f)-(k) 3 years from date of inspection for records of operations, monitoring, and inspections listed in 40 CFR Part 264.1064 (d) - (e).</td>
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<td>264.1089, 264.73(b)(6) Recordkeeping requirements</td>
<td>As specified in 264.1089(a)</td>
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<tr>
<td>264.1100 through 1102 Recordkeeping Requirements</td>
<td>As specified in inspections</td>
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<tr>
<td>Notices to generators as specified by 40 CFR Part 264.12(b), 264.73(b)(7)</td>
<td>3 years from the date the waste accepted for shipment</td>
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<tr>
<td>Closure cost estimates required under 40 CFR Part 264.142, 264.73(b)(8)</td>
<td>Current cost estimate until closure of the facility</td>
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<td>A certification no less than annually that the permittee has a program in place to reduce the volume and toxicity of hazardous waste that the permittee generates to the degree determined economically practicable; and the proposed method of treatment, storage, and disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.</td>
<td>Current certification until closure of the facility</td>
</tr>
<tr>
<td>Copies of the notice(s), and the certification and demonstration if applicable, required by the generator or the owner or operator under 40 CFR Part 268.7 and 268.8 for treatment and storage of restricted waste.</td>
<td>3 Years from Date of Delivery</td>
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<td>Hazardous waste manifests for shipments received and accepted by the facility.</td>
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<tr>
<td>OPERATING RECORD REQUIREMENTS FOR TSD</td>
<td>RETENTION PERIOD</td>
</tr>
<tr>
<td>--------------------------------------</td>
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<tr>
<td>TSD AS A GENERATOR REQUIREMENTS</td>
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</tr>
<tr>
<td>Uniform hazardous waste manifests. 262.40(a)</td>
<td>3 years from the date the waste was accepted by the initial transporter</td>
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<tr>
<td>Copies of biennial reports. 262.40(b)</td>
<td>3 years from the due date of the report</td>
</tr>
<tr>
<td>Records of test results, waste analyses, or other determinations made in accordance with 40 CFR Part 262.11 [262.40(c)]</td>
<td>3 years from the date the waste was last sent to on-site or off-site treatment, storage, or disposal.</td>
</tr>
<tr>
<td>Copies of notices, certifications, restricted waste determinations whether by knowledge of the waste, testing, or supporting data and other documentation as required by 40 CFR Part 268.7(a)(5)</td>
<td>3 years from the date the waste was last sent to on-site or off-site treatment, storage, or disposal.</td>
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<tr>
<td>Notification of intent to export hazardous waste [262.57(a)(1)]</td>
<td>3 years from the date the hazardous waste was accepted by the initial transporter</td>
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<tr>
<td>Copy of each EPA Acknowledgement of Consent to export hazardous waste. [262.57(a)(2)]</td>
<td>3 years from the date the hazardous waste was accepted by the initial transporter</td>
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<tr>
<td>Copy of each confirmation of delivery of the hazardous waste from the consignee of an exported shipment of hazardous waste [262.57(a)(3)]</td>
<td>3 years from the date the hazardous waste was accepted by the initial transporter</td>
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<tr>
<td>Copy of each annual report prepared for exports of hazardous waste. [262.57(a)(4)]</td>
<td>3 years from the due date of the report</td>
</tr>
</tbody>
</table>

(1) The retention period for all records required under 40 CFR Parts 262, 264, 265, and 268 are extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the administrator.

The number and types of data required as part of the operating record are extensive. The Heritage facility manages operating record information in several different ways. Documentation required by the operating record are stored by the facility in hard copy files, microfilmed, stored electronically on computer systems, or stored on magnetic or similar data storage media. Records are also maintained at a commercial records retention facility.
EXHIBIT 1

FACILITY MAPS
# LIST OF DRAWINGS
## ATTACHMENT B
## FACILITY MAPS

**Heritage Environmental Services, LLC**  
Indianapolis, Indiana

<table>
<thead>
<tr>
<th>Drawing Source</th>
<th>Title</th>
<th>Drawing Number</th>
<th>Revision Date</th>
</tr>
</thead>
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<tr>
<td>Heritage Environmental Services, LLC</td>
<td>Topographic Map East of 21150.0 E</td>
<td>INI1202C0100 Sheet 1 of 2</td>
<td>July 2017</td>
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<td>Heritage Environmental Services, LLC</td>
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<td>INI1202C0110 Sheet 1 of 2</td>
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<td>29058Z18 - Sheet 2 of 2</td>
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<td>Heritage Environmental Services, LLC</td>
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<td>Heritage Environmental Services, LLC</td>
<td>Security System and Internal Roads</td>
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<td>Heritage Environmental Services, LLC</td>
<td>Building and Structures, Loading and Unloading</td>
<td>INI1202C0140 Sheet 1 of 1</td>
<td>July 2017</td>
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<td>INI1202C0150 Sheet 1 of 1</td>
<td>July 2017</td>
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<td>INI1202C0160 Sheet 1 of 2</td>
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<td>Fire Controls, Sewers, Potable Water and Natural Gas</td>
<td>29058Z86 - Sheet 2 of 2</td>
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<td>Heritage Environmental Services, LLC</td>
<td>Solid Waste Management Units, Monitor Wells, and Boreholes</td>
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<td>July 2017</td>
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<td>Heritage Environmental Services, LLC</td>
<td>Wind Rose</td>
<td>29058Y70 – Sheet 1 of 1</td>
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</tbody>
</table>

**B – E1 – 2**
ATTACHMENT C
WASTE ANALYSIS PLAN
WASTE ANALYSIS PLAN

Heritage Environmental Services, LLC
7901 West Morris Street
Indianapolis, Indiana

IND 093 219 012
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1. **INTRODUCTION**

Heritage Environmental Services, LLC is a commercial waste management facility located at 7901 West Morris Street in Indianapolis, Indiana ("the Facility"). The Facility received its Part B Resource Conservation and Recovery Act (RCRA) permit in December 1990. The Facility is permitted to store and treat RCRA hazardous wastes from a wide variety of off-site sources, including but not limited to manufacturing facilities, remediation sites, other waste treatment and storage facilities, and transporters. In general, hazardous wastes managed at the Facility may include solids, liquids, and sludges; contaminated soils and debris; organic wastestreams such as inks, paints, solvents and other hydrocarbons; contaminated waters and leachate; lab packs; and treatment residues from other waste treatment and storage facilities. The specific hazardous wastes the Facility is permitted to manage are listed in Permit Condition VIII.

1.1. **Implementation of Waste Analysis Plan in General**

Portions of the waste analysis plan may be implemented by an affiliate ("Heritage") or activities such as corporate expertise for review and approval of hazardous wastes; technical assessment and evaluation of hazardous wastes being managed by the Facility; management oversight; and other functions related to implementation of the Facility’s waste analysis plan. Wastestream pre-approval sampling may be conducted by generators of the hazardous waste or their designee.

For hazardous wastes being considered for acceptance at the Facility, pre-acceptance waste screening and pre-acceptance waste sampling associated with specific shipments of hazardous waste destined for the Facility will be implemented at the Facility or at the Heritage affiliate located at 1626 Research Way in Indianapolis, Indiana. Details of these activities are further described in this waste analysis plan.

Laboratory testing associated with implementation of this waste analysis plan may be implemented by the Facility, Heritage, and/or a third-party laboratory.

1.2. **Hazardous Waste Management Systems**

The Facility operates various hazardous waste management systems and programs for managing wastes, including aqueous treatment for listed and characteristic wastes (e.g., cyanide destruction, wastewater treatment, metals precipitation, hexavalent chromium reduction, pH adjustment, dewatering), solids stabilization, fuels blending, organics oxidation, and management of generator hazardous waste prior to shipment to an off-site location. The Facility also operates a used oil recycling system that is not subject to RCRA hazardous waste permitting.

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1 Laboratory testing is performed by the Facility, Heritage, or a third-party laboratory for pre-approval screening as described in detail within this waste analysis plan. Appendix A provides additional information associated with the organization that typically performs laboratory testing procedures associated with this waste analysis plan. All pre-acceptance sample laboratory tests will be conducted at the Facility, with the exception of procedures the Facility laboratory cannot conduct due to test method or equipment failure. All such third-party laboratory work for pre-acceptance screening will be documented in the Operating Record.
requirements. Further details regarding processes and procedures are discussed in other sections of the Facility's RCRA Subtitle C Permit.

1.3. **Example Forms and Signature Process**

Forms included in this waste analysis plan are typical forms used by Heritage and are provided as examples only. These forms may require modification to include additional information, allow more efficient processing, or in response to changes in regulations, operations, customer needs or corporate policies. At a minimum, the forms used by Heritage will contain the information shown in the included examples or information necessary to comply with applicable regulatory requirements.

This waste analysis plan includes direct and indirect references to processes that involve the collection of signature(s), through the usage of terms such as signing, signatures, certifying, and certifications. Signatures may be collected in a variety of formats or methods that are commonly accepted for commercial business transactions.

1.4. **Laboratory Analysis and Quality Assurance/Quality Control (QA/QC) Procedures**

Analyses specified in this waste analysis plan will be performed in accordance with the methods specified in this waste analysis plan. Test methods will conform to the current editions, including approved updates, of "Test Methods for Evaluating Solid Waste" (SW-846), "Standard Methods for the Examination of Water and Wastewater", ASTM or other acceptable methods as specified herein. Acceptable test methods for analysis of hazardous waste are specified in Appendix A of this waste analysis plan. Laboratory procedures will be performed in accordance with the current laboratory quality assurance/quality control procedures maintained and updated by the laboratory. Quality assurance/quality control procedures which include sampling procedures are outlined in Appendix B of this permit. These procedures may require modification to incorporate additional procedures, or in response to changes in methods or internal laboratory quality assurance/quality control policy.

1.5. **Personnel Qualifications Regarding Waste Analysis Plan Implementation at the Facility**

Waste analysis plan activities conducted at the Facility and 1626 Research Way will be implemented by trained hazardous waste technicians, supervisors, or professionals following Attachment H of the Facility RCRA Subtitle C Permit.²

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² All references to "hazardous waste technicians, supervisors, or professionals" refers to persons trained according to Attachment H of this Permit.
2. **WASTE ANALYSIS PLAN OBJECTIVES**

In accordance with the requirements specified in 40 CFR 264.13(b), as incorporated by reference in 329 IAC 3.1-9-1, the Facility has developed a waste analysis plan as part of its RCRA operating permit obligations. This waste analysis plan specifies the procedures to be implemented by Heritage and the Facility to ensure that the following objectives are met by the Facility:

- Only those hazardous wastes specified in the RCRA hazardous waste permit will be approved for management at the Facility;
- Information regarding the chemical and physical characteristics of each hazardous wastestream will be obtained, evaluated and maintained at the Facility;
- Confirmation that each hazardous wastestream presented to the Facility is consistent with the description and characteristics of that wastestream's approval information;
- Hazardous wastes will be safely and efficiently stored and managed based on the information gathered concerning each wastestream;
- Wastes generated at the Facility will be appropriately characterized for purposes of disposal and compliance with applicable Land Disposal Restrictions (LDR); and
- Stabilized treatment residue shipped off-site for land disposal will meet the applicable treatment standards specified by the Land Disposal Restrictions in 40 CFR Part 268.
3. **GENERAL PROCEDURES**

To achieve the objectives outlined in Section 2, Heritage and the Facility will implement the procedures specified in this section. This section provides a general overall discussion of the waste analysis plan procedures. The procedures discussed in this waste analysis plan will be implemented and/or supervised by experienced, trained personnel who are knowledgeable of the requirements of the applicable portions of this waste analysis plan. Technical staff at Heritage will be responsible for specific aspects of the waste analysis plan based on their areas of responsibility. The procedures summarized below are discussed in greater detail in subsequent sections of this waste analysis plan.

3.1. **Wastestream Characterization and Approval**

Wastestream characterization and approval procedures specified in Section 4 of this waste analysis plan will be followed to characterize each hazardous wastestream accepted\(^3\) from an off-site source and to provide information upon which Heritage will base its determination regarding approval of each wastestream prior to the Facility accepting the waste. Information gathered during the wastestream characterization and approval process will also be used to assign approved hazardous wastestreams to an appropriate waste management system. Waste management systems are discussed in Sections 4.3 and 7.4 of this waste analysis plan. Wastestream approval will include review of a wastestream survey, pre-approval analysis in accordance with the procedures specified in Section 4.2, summarized separately in Section 3.2, and final wastestream approval. Review of wastestream characterization and approval information will be performed by personnel\(^4\) knowledgeable of the applicable criteria specified by the Facility's RCRA Subtitle C Permit, including this waste analysis plan.

1. **Frequency** - Each hazardous wastestream will require case-by-case review on an individual basis prior to acceptance of the first shipment. Approved wastestreams will be reevaluated in accordance with the procedures specified in Section 4.5 of this waste analysis plan.

2. **Analysis Parameters** - Sample analysis is summarized in Section 3.2 and discussed in detail in Section 4 of this waste analysis plan.

3. **Rationale** - To characterize the wastestream, determine whether it is acceptable to the Facility, and assign an appropriate waste management system.

4. **Test Methods** - Sample analysis is summarized in Section 3.2 and discussed in detail in Section 4 of this waste analysis plan. Acceptable test methods are listed in Appendix A.

5. **Sampling Methods** - Sample collection is summarized in Section 3.2 and discussed in detail in Section 4 and Appendix B of this waste analysis plan.

6. **Documentation** - Completed wastestream surveys, safety data sheets or equivalent technical information, analytical data, and other pertinent

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\(^3\) For the purposes of implementing this Waste Analysis Plan, the term "accepted" is intended to indicate the point at which the Uniform Hazardous Waste Manifest is signed by the Facility. The Uniform Hazardous Waste Manifest is signed by Facility representatives after the consignment crosses the property line of the Facility.

\(^4\) See Footnote 2.
wastestream information will be maintained in the Facility's operating record.

3.2. **Analysis During Wastestream Characterization and Approval** (“Pre-Approval Analysis”)

**GENERAL PROCEDURES - ALL WASTESTREAMS**

Pre-approval analysis is a part of the wastestream characterization and approval process summarized in Section 3.1 of this waste analysis plan. Pre-approval analysis of a representative wastestream sample will be conducted in accordance with the criteria specified in Section 4.2 of this waste analysis plan prior to acceptance of the first shipment of a hazardous wastestream. Review of pre-approval analyses will be performed by personnel knowledgeable of the applicable criteria specified by the Facility RCRA permit, including this waste analysis plan.

1. **Frequency -** Analysis will be performed where required prior to acceptance of the initial shipment in accordance with Section 4.2 and reevaluated in accordance with Section 4.5 of this waste analysis plan.

2. **Analysis Parameters -** Specific to assigned waste management system (see Section 7).

3. **Rationale -** To collect information to supplement the wastestream approval information, as necessary; to further characterize the wastestream; to determine whether the wastestream is acceptable to the Facility; and to assign an appropriate waste management system. To ensure that the wastestream can be safely stored and subsequently managed, as appropriate.

4. **Test Methods -** Analysis will be performed in conformance with the current edition, including approved updates, of "Test Methods for Evaluating Solid Waste" (SW-846), "Standard Methods", ASTM or other acceptable methods as specified in Section 7 and Appendix A of this waste analysis plan.

5. **Sampling Methods -** Samples will be collected by generators or their authorized representatives and submitted to Heritage for analysis, as required (see Section 4.2).

6. **Documentation -** Analytical data obtained during pre-approval sample analysis will be maintained with other wastestream approval information for the wastestream in the Facility's operating record.

**SPECIFIC PROCEDURES - ON-SITE STABILIZATION**

In addition to the general procedures specified above, the Facility or a third party laboratory will conduct supplemental analyses on wastes intended to be managed in waste management systems described as "Solids Stabilization System" and "Solids Stabilization System - Characteristic/K062" in Section 7.4 of this document. This analysis is necessary to document that a wastestream which has been designated for stabilization amenable to processing in the Facility's treatment systems.

For wastestreams designated for these process systems, the Facility will perform a stabilization evaluation for inorganic constituents. This evaluation will consist of a simulation of the Facility's stabilization process. Stabilization reagents will be
added to the sample and tested analytically, typically by the Toxicity Characteristic Leaching Procedure (TCLP). The analytical results will be compared to treatment standards and constituents applicable to the wastestream (e.g., an F006 waste would be evaluated for cadmium, chromium, lead, nickel and silver by TCLP in addition to total and amenable cyanide). If the wastestream meets the applicable treatment standards, it will be assigned a "pass" result and can be accepted. The Facility will review if remaining Waste Analysis Plan criteria are met. If the wastestream does not meet the applicable treatment standards, it will be assigned a "Fail" result and cannot be treated in the Facility's on-site stabilization systems until acceptable analytical documentation is obtained that demonstrates the Facility's ability to achieve the appropriate treatment standards. However, the wastestream would still be eligible for storage at the Facility prior to subsequent management at a third-party off-site location. Certain wastestreams may also be presented to the Facility, which meet LDR treatment standards in an as-is condition without the need for stabilization reagents. In these cases, analytical data must be obtained by the Facility, Heritage or presented by the generator that demonstrates compliance with the applicable treatment standards.

Organic constituents will not be evaluated, since the Facility does not accept wastestreams into its on-site stabilization systems, which exceed organic treatment standards as established in 40 CFR 268. Certain wastes with alternate treatment standards available by regulation (e.g., hazardous debris and contaminated soil) will also be managed at the Facility, provided that they do not exceed the applicable alternate organic treatment standards. The Facility will obtain documentation from the generator, such as an LDR notice, certification statement, analytical data, or other statement that the waste presented for treatment in the Facility's on-site stabilization systems is below any applicable wastestream-specific organic constituent treatment levels.

SPECIFIC PROCEDURES - ON-SITE STABILIZATION OF CONTAMINATED SOILS

In addition to the general procedures and specific procedures for on-site stabilization, certain types of wastestreams will require additional information for approval. Contaminated soil wastestreams intended for on-site stabilization typically originate from a large generator or Superfund remediation project that results in episodic disposal of a large quantity of waste. Due to the typical nature of these projects, contamination "hotspots" and wastestream variability are known to occur. These projects are very case specific, and do not easily fit generic approval categories or procedures.

Heritage recognizes that supplemental technical review will be required to ensure accurate descriptions of the potential waste variability, including the Facility's on-site treatment capabilities. These projects may be extensively characterized, as typical of a CERCLA Superfund action or RCRA Facility Investigation, or poorly characterized, as typical of certain generator voluntary cleanup actions. Accurate assessment of the analytical and project data will largely be subject to interpretation by Heritage's internal technical staff. To accommodate potential wastestream variability, the Facility will, at a minimum, require a stabilization evaluation for contaminated soil wastes ultimately intended for disposal as described in the preceding section (e.g., SPECIFIC PROCEDURES - ON-SITE STABILIZATION) for each wastestream on a quarterly basis. This information may be obtained or provided prior to the initiation of disposal activities, or on an ongoing
basis as the disposal project progresses. Any other information required for approval will be at the discretion of Heritage's technical staff.

**SPECIFIC PROCEDURES - ON-SITE MANAGEMENT OF HAZARDOUS DEBRIS**

In addition to the general procedures outlined above, certain types of wastestreams may be presented to the Facility for debris treatment. Any wastestreams intended for management by debris treatment must meet the definitions of "Debris" or "Hazardous debris" as specified at 40 CFR 268.2(g) and (h). Due to their waste matrix, debris wastestreams intended for management by the debris treatment technologies described in Table 1, 40 CFR 268.45, typically require additional or alternate approval procedures. Debris wastestreams are generally not amenable to analysis by conventional means.

Debris treatment may be conducted in a container, a container or tank management unit, or in a containment building. Processing equipment may be moved from another operation or rented as necessary to meet the treatment objectives. The Facility will maintain the capability to conduct the following debris management activities:

<table>
<thead>
<tr>
<th>Physical Extraction</th>
<th>abrasive blasting, scarification, grinding and planning, high-pressure steam and water sprays</th>
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</thead>
<tbody>
<tr>
<td>Chemical Extraction</td>
<td>water washing and spraying, liquid phase solvent extraction</td>
</tr>
<tr>
<td>Chemical Destruction</td>
<td>chemical oxidation, chemical reduction</td>
</tr>
<tr>
<td>Immobilization</td>
<td>microencapsulation, macroencapsulation, or sealing</td>
</tr>
</tbody>
</table>

For approval purposes, Heritage will rely on a combination of its technical expertise and analytical data, where feasible, to demonstrate the suitability of a particular debris management technology. For example, it is well known that high-pressure water sprays can adequately remove the surface layers of concrete as well as clean residuals from non-porous surfaces such as plastic, so an analytical determination is not necessary. In contrast, the Facility could demonstrate analytically that the contaminant(s) of concern are amenable to chemical extraction or destruction technologies specified in 40 CFR 268.45.

For each debris management technology, there are specific performance standards. Treatment must be performed in accordance with the appropriate performance standard. The Facility will comply with these performance standards in Table 1, 40 CFR 268.45. For operating record purposes, the Facility will develop a form for documentation of compliance with debris performance standards (typically associated with the LDR notification). For example, high pressure water treatment that would contain the following language: "Wastestream X was managed by the debris treatment technology in Table 1, 40 CFR 268.45, Physical Extraction - high pressure water. The wastestream is composed of glass, metal, plastic, and rubber, and will be cleaned to a clean debris surface standard as defined in the referenced regulation." For debris treatment standards that require a demonstration that a specific chemical efficiency was achieved as the performance standard, that information will be maintained in the operating record.
(e.g., demonstration that contaminants achieve at least a 5% by weight water solubility for Chemical Extraction - Water washing and spraying).

3.3. Screening of Wastes Prior to Waste Acceptance ("Pre-Acceptance Screening")

Pre-acceptance screening of wastes in accordance with the procedures specified in Section 5 of this waste analysis plan will be performed for each hazardous waste approved for acceptance. The pre-acceptance screening is to ensure that the waste has been approved for acceptance, the waste can be safely stored and subsequently managed, and to verify information collected during wastestream approval is consistent with the waste identified on the manifest. Pre-acceptance screening will be performed by experienced, trained hazardous waste technicians, supervisors or professionals\(^5\) that are knowledgeable of the applicable criteria specified by the Facility RCRA Subtitle C Permit, including this waste analysis plan.

1. Frequency - Each hazardous waste shipment will require case-by-case review on an individual basis (see Section 5).

2. Analysis Parameters - Visual inspections and review of paperwork will be performed by Heritage at 1626 Research Way or the Facility prior to acceptance. Waste sampling and analysis during pre-acceptance screening are summarized in Section 3.4 and discussed in greater detail in Section 6 of this waste analysis plan.

3. Rationale - To verify that the wastestream has been approved and that the wastestream identified on the manifest is consistent with the wastestream intended for acceptance.

4. Test Methods - Visual inspections and review of paperwork will be performed by Heritage at 1626 Research Way or the Facility prior to acceptance. Waste sampling and analysis during pre-acceptance screening are summarized in Section 3.4 and discussed in greater detail in Section 6 of this waste analysis plan.

5. Sampling Methods - Visual inspections and review of paperwork will be performed by Heritage at 1626 Research Way or the Facility prior to acceptance. Waste sampling and analysis during pre-acceptance screening are summarized in Section 3.4 and discussed in greater detail in Section 6 of this waste analysis plan.

6. Documentation - Hazardous waste manifests and Land Disposal Restrictions notices reviewed during pre-acceptance screening will be maintained in the Facility's operating record.

3.4. Wastes Sampling and Analysis

Sampling and analysis of hazardous wastes (pre-acceptance screening and Facility generated wastes) will be performed in accordance with the procedures and requirements specified in Section 6 of this waste analysis plan to determine storage compatibility and verify the appropriate waste management system. Samples collected for pre-approval analysis are typically collected by the Generator of the waste or their designee. Waste sampling and analysis will be performed by trained hazardous waste technicians, supervisors, or professionals,

\(^5\) See Footnote 2.
respectively, in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed. Review of wastes sampling and analysis data will be performed by personnel knowledgeable of the applicable criteria specified by the Facility RCRA permit, including this waste analysis plan.

1. Frequency - As specified in Section 6 of this waste analysis plan, each hazardous waste shipment will require specific analysis.

2. Analysis Parameters - Specific to the assigned waste management system (see Section 7).

3. Rationale - To determine storage compatibility; to verify the assigned waste management system is appropriate for management of the waste; to verify compatibility with the assigned waste management system's contents; and to verify information collected during wastestream characterization and approval.

4. Test Methods - Analysis will be performed in general conformance with the current edition, including approved updates, of "Test Methods for Evaluating Solid Waste" (SW-846), "Standard Methods", ASTM or other acceptable methods as specified in Section 7 and Appendix A of this waste analysis plan.

5. Sampling Methods - Sampling will be performed by trained, experienced hazardous waste technicians, supervisors, or professionals\(^6\) utilizing as guidance the current edition, including approved updates, of "Test Methods for Evaluating Solid Waste" (SW-846), as adopted by reference at 40 CFR Part 261, Appendix I, ASTM or other methods appropriate to waste characterization activities. Sampling methods and procedures are further described in Section 6.

6. Documentation - Analytical data obtained during waste sampling and analysis will be maintained in the operating record.

3.5 Facility-Generated Waste Characterization

Characterization of facility-generated wastes will be performed in accordance with Section 8 of this waste analysis plan to determine whether a waste is a hazardous waste and to assign appropriate hazardous waste codes and Land Disposal Restrictions information to wastes that are determined to be hazardous wastes. Waste characterization will be performed by personnel knowledgeable of the criteria specified by applicable RCRA regulations, and the Facility's RCRA permit, including this waste analysis plan. Any wastestream sampling and analysis will be performed by trained hazardous waste technicians, supervisors, or professionals\(^7\), in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed.

1. Frequency - Characterization will be performed for individual facility-generated wastestreams as each unique wastestream is generated and will be updated in accordance with Section 8 of this waste analysis plan.

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\(^6\) See Footnote 2.

\(^7\) See Footnote 2.
2. Analysis Parameters - Analysis parameters will be selected on a case-by-case basis, as necessary to properly characterize each wastestream (see Section 6).

3. Rationale - To determine whether facility-generated waste is a hazardous waste; to assign applicable hazardous waste codes and Land Disposal Restrictions treatment standards to those wastes determined to be hazardous wastes; and to obtain information for safe storage and subsequent management in an appropriate on-site or off-site waste management system.

4. Test Methods - Analysis will be performed in conformance with methods specified by 40 CFR Part 261 and Part 268, including the current edition, with approved updates, of "Test Methods for Evaluating Solid Waste" (SW-846) and "Standard Methods", ASTM, or other acceptable methods. A list of specific analytical methods is provided in Appendix A.

5. Sampling Methods - Sampling will be performed utilizing as guidance the current edition, including approved updates, of "Test Methods for Evaluating Solid Waste" (SW-846), as adopted by reference at 40 CFR Part 261, Appendix I, ASTM or other methods appropriate to waste characterization activities. Sampling methods and procedures are further described in Section 6.

6. Documentation - Waste characterization information will be maintained in the Facility's operating record.

3.6. Land Disposal Restrictions

Review of Land Disposal Restrictions notices and management of stabilized treatment residue will be conducted in accordance with Sections 5 and 9 of this waste analysis plan to maintain compliance with Land Disposal Restrictions requirements. The Facility will not accept wastes into on-site stabilization systems that do not achieve applicable treatment standards for organic constituents. The Facility will perform dose/response testing to maintain efficient stabilization formulations for wastes shipped off-site and represented as meeting LDR treatment standards. Review of Land Disposal Restrictions notices, dose/response data, and LDR confirmation sample results will be performed by personnel knowledgeable of the applicable criteria specified by applicable RCRA regulations, and the Facility's RCRA permit, including this waste analysis plan. Dose/response and LDR confirmation sampling and analysis will be performed by trained hazardous waste technicians, supervisors or professionals in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed.

1. Frequency - Review of Land Disposal Restrictions notices from off-site sources for each shipment or at approval for one-time notices; monthly for dose/response testing; and quarterly for LDR confirmation sampling and analysis (see Section 9).

2. Analysis Parameters - Applicable Land Disposal Restrictions treatment standards parameters in accordance with Section 9 of this waste analysis plan.
3. Rationale - To verify Land Disposal Restrictions compliance for shipments of hazardous wastes; maintain an efficient stabilization reagent formulation; and document compliance with applicable Land Disposal Restrictions treatment standards for shipments to an off-site land disposal facility that meet LDR treatment standards.

4. Test Methods - Analysis will be performed in conformance with the methods specified in 40 CFR Part 268 (see Section 9). A list of specific analytical methods is provided in Appendix A.

5. Sampling Methods - Sampling will be performed utilizing as guidance the current edition, including approved updates, of "Test Methods for Evaluating Solid Waste" (SW-846), ASTM or other methods appropriate to waste characterization activities (see Section 9). Sampling methods and procedures are further described in Section 6.

6. Documentation - Land Disposal Restrictions notices and analytical results will be maintained in the Facility's operating record.

4. WASTESTREAM CHARACTERIZATION AND APPROVAL

Heritage will require characterization, review and evaluation of hazardous wastestreams (i.e., wastestream approval) prior to approval and acceptance of the first shipment for a wastestream. Wastestream characterization and approval will include review of a complete wastestream survey, analysis of a representative sample, as required, assignment of an appropriate waste management system, and final approval or disapproval of the wastestream. These steps in the characterization and approval process are described in this section. All evaluations will be conducted on a wastestream-specific basis. During the evaluation process, discrepancies identified with technical, regulatory, or administrative information (or clarifications) will be resolved during the wastestream approval process by interacting with the generator of the waste or Heritage personnel. Trained8 Heritage technical personnel who are knowledgeable of the wastestream approval requirements and Heritage waste management systems will conduct wastestream review and approval. The wastestream characterization and approval process is summarized in Figure 4-1.

4.1. Wastestream Survey

The hazardous wastestream characterization and approval process will begin with a review of a completed wastestream survey for the prospective wastestream. The wastestream survey will provide information necessary to characterize the wastestream, determine whether it is acceptable to the Facility, and assign an appropriate waste management system. Each wastestream survey will be completed with relevant certification(s) signed by the generator, or a generator-authorized representative, prior to approval of the hazardous wastestream by Heritage. An example wastestream survey form is included in Appendix C.

The information included on the wastestream survey will be considered with other available information when determining how to effectively and safely manage the wastestream. The information included on the wastestream survey may also be used to determine the need, nature and extent of sample analysis prior to approval.

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8 See Footnote 2.
of the wastestream by Heritage. Information provided on the wastestream survey will include:

1. Identification of the generator, including USEPA identification number;
2. A physical description of the wastestream and the process generating the wastestream;
3. Identification of applicable hazardous waste code(s);
4. Land Disposal Restrictions compliance information;
5. Physical properties and chemical characteristics of the wastestream; and
6. Applicable certification(s) regarding the information supplied on the wastestream survey.

The wastestream survey may include additional data provided by the generator, such as safety data sheets, generating process information, analytical data, etc. Based on an evaluation of the information provided on and with the wastestream survey, Heritage may approve or disapprove each wastestream and assign each approved wastestream to an appropriate waste management system. The assigned waste management system will determine the mandatory parameters to be analyzed during pre-approval analysis (Section 4.2) and/or wastestream sampling and analysis as discussed in Section 6. The individual waste management systems and associated mandatory analytical parameters are listed in Section 7 of this waste analysis plan.
Figure 4-1
Heritage Environmental Services, LLC
Indianapolis, Indiana
Wastestream Approval Procedures

Generator Contacts Heritage

- Is The Waste Acceptable In The Facility Permit?
- Will Treatment Of This Waste Require Special Operational Considerations?
- Is The Waste Reactive Or Does It Require Special Handling?
- Which Heritage Waste Management System Would Be The Most Appropriate?

Wastestream Survey Is Submitted For Review

Per Section 4.1

Representative Sample Is Submitted As Required

Per Section 4.2

Sample Is Analyzed And Compared To Waste Profile Sheet Data As Required

Per Section 4.0

Discrepancy Exists

- No Resolution. Wastestream Not Approved

No Discrepancies. Waste Is Approved

Resolve Discrepancy

Assign Appropriate Waste Management System And Wastestream Number
Lab packs will be approved using the following review procedure. The lab pack approval process will begin with a review of a completed wastestream survey. The wastestream survey will provide information necessary to verify that the wastes included in the lab pack are acceptable to Heritage. Each wastestream survey will be completed with relevant certification(s) signed by the generator, or a generator-authorized representative, prior to approval of the lab pack by Heritage. An example wastestream survey form is included in Appendix C. Information provided on and with the wastestream survey for lab packs will include:

1. Identification of the generator, including USEPA identification number;
2. For lab packs that are not packed by Heritage personnel, identification of applicable hazardous waste codes; an inventory list of the chemicals to be packed, or a packing list if the wastes are already packed;
3. Applicable certification(s) regarding the information supplied on the wastestream survey.

The wastestream survey may include additional data provided by the generator, such as safety data sheets, chemical-specific data, generating process information, analytical data, etc. Subsequent lab pack shipments from the same generator will not require a new wastestream survey form, but will require a shipment-specific inventory or packing list with the applicable hazardous waste codes, as specified in 2 above.

Following a thorough review of the completed wastestream survey, Heritage will either approve or disapprove the lab pack. Heritage may request that the generator modify the inventory or packing list to exclude specific wastes that are not acceptable to Heritage, or repackage specific wastes that are deemed incompatible.

Heritage may approve virgin, off-specification, outdated, obsolete, unsalable, or unusable commercial products that are hazardous wastes without the pre-approval analysis specified in Section 4.2. To approve a hazardous wastestream as a commercial product, a completed wastestream survey must be reviewed. The completed wastestream survey will include:

1. Identification of the generator, including USEPA identification number;
2. A physical description of the wastestream and the process generating the wastestream;
3. Identification of applicable hazardous waste code(s);
4. Land Disposal Restrictions compliance information;
5. Physical properties and chemical characteristics of the wastestream; and
6. Applicable certification(s) regarding the information supplied on the wastestream survey.

The wastestream survey must also include safety data sheet(s), or equivalent technical information, for the commercial product and a certification stating the material is a commercial product that has not been mixed with or contaminated by other hazardous wastes. The wastestream survey may include additional data provided by the generator, such as information regarding the source of the material, analytical data, etc. Based on an evaluation of the information provided on and with the wastestream survey, Heritage may approve or disapprove each
commercial product wastestream. An appropriate waste management system will be assigned based on the information included in the completed wastestream survey and the material will be approved or disapproved based on this information in accordance with the procedures specified in Section 4.3 of this waste analysis plan.

Wastestreams generated by analogous processes at multiple locations operated by the same generator company will require a review of an initial completed wastestream survey. The initial wastestream survey will provide information necessary to characterize the wastestream, determine whether it is acceptable to Heritage, and assign an appropriate waste management system. Each initial wastestream survey will be completed with relevant certification(s) signed by the generator, or a generator-authorized representative, prior to approval of the hazardous wastestream by Heritage. An example wastestream survey form is included in Appendix C.

The information included on the initial wastestream survey will be considered with other available information when determining how to effectively and safely manage the wastestream. The information included on the initial wastestream survey may also be used to determine the need, nature and extent of sample analysis prior to approval of the wastestream by Heritage. Information provided on the initial wastestream survey will include:

1. Identification of the generator company;
2. A physical description of the wastestream and the process generating the wastestream;
3. Identification of applicable hazardous waste code(s);
4. Land Disposal Restrictions compliance information;
5. Physical properties and chemical characteristics of the wastestream; and
6. Applicable certification(s) regarding the information supplied on the initial wastestream survey.

The initial wastestream survey may include additional data provided by the generator, such as material safety data sheets, generating process information, analytical data, etc. Based on an evaluation of the information provided on and with the initial wastestream survey, Heritage may approve or disapprove the wastestream. Approved wastestreams will be assigned to an appropriate waste management system. As with other approved wastestreams, the assigned waste management system will determine the mandatory parameters to be analyzed during wastestream pre-approval analysis (Section 4.2) and/or wastestream sampling and analysis as discussed in Section 6. The individual waste management systems and associated mandatory analytical parameters are listed in Section 7 of this waste analysis plan.

Subsequent approvals for the wastestream generated at various locations operated by the same generator company will require review of site-specific wastestream surveys. These site-specific wastestream surveys will require:

1. Specific identification of the generator, including location and USEPA identification number for the specific generator location; and
2. Applicable certification(s) regarding the information supplied on the initial wastestream survey.

Other wastestream information gathered from the initial wastestream survey will already be included in Heritage's wastestream database. Relevant certification(s) must be signed by a representative from the site-specific generator location, or a generator-authorized representative, prior to approval of the site-specific hazardous wastestream by Heritage. Wastestream pre-approval samples and analyses will not be required for site-specific wastestream approvals subsequent to the initial wastestream survey review and approval.

4.2. Analysis During Characterization and Approval of Wastestreams (“Pre-Approval Analysis”)

Hazardous wastestreams to be shipped to the Facility in bulk containers (i.e., containers with greater than 500 gallons capacity), such as tanker trucks, rail tank cars, roll off boxes and semi-dump trailers, will require pre-approval analysis during the characterization and approval process. This pre-approval analysis will be used to verify information provided on the wastestream survey, to verify the appropriate waste management system for that wastestream, and for final approval or disapproval of the wastestream. Information provided on the wastestream survey and other generator-supplied information may be used in addition to pre-approval analysis data for final approval and to assign an appropriate waste management system.

A representative sample of each bulk hazardous wastestream will be provided to the Facility by the generator, or an authorized representative, and analyzed prior to final approval of the wastestream. The pre-approval sample will be analyzed for the Stage 2 mandatory parameters specified for the waste management system assigned to that wastestream following review of the wastestream survey. As stated in Section 4.1, the assigned waste management system will determine the mandatory parameters to be analyzed. Stage 2 mandatory analyses include analyses designed to verify proper treatment in the selected waste management system. Stage 2 mandatory analyses are discussed in Section 6 of this waste analysis plan. The potential waste management systems and associated Stage 2 mandatory analytical parameters are listed in Section 7 of this waste analysis plan. Supplemental analyses specified for a particular waste management system in Section 7.4 of this waste analysis plan will be determined as required by the Facility or Heritage.

Analytical data provided by the generator of the wastestream may be considered in lieu of analyzing the mandatory or supplemental parameters for a particular waste management system. Generator-supplied data used in lieu of pre-approval analysis must include at least the Stage 2 mandatory parameters specified for the appropriate waste management system in Section 7.4 of this waste analysis plan. Parameters not included in the data supplied by the generator that are specified as mandatory Stage 2 analyses for the appropriate waste management system will be analyzed.

The Facility may also accept data already documented by other Heritage locations for a particular wastestream. Such data must include at least the Stage 2 mandatory parameters specified for the appropriate waste management system in Section 7.4 of this waste analysis plan. Analytical parameters not documented by
another Heritage location that are specified as mandatory Stage 2 analyses for the appropriate waste management system will be analyzed.

4.3. Final Wastestream Approval

Based on the information gathered during the approval process, including the wastestream survey and pre-approval analysis, as applicable, Heritage will either approve or disapprove the hazardous wastestream. Approved wastestreams will be assigned an appropriate waste management system based on information reviewed during the approval process. The waste management systems and the general types of hazardous wastes treated in these systems at the Facility include:

1. Aqueous Treatment - Aqueous hazardous wastes, acid wastes, caustic wastes, oxidizers, cyanide-bearing wastes, wastewater treatment residues, liquid sludges, soluble solids.

2. Aqueous Treatment - Characteristic/K062 - Aqueous hazardous wastes, acid wastes, caustic wastes, oxidizers, cyanide-bearing wastes, wastewater treatment residues, liquid sludges, soluble solids which carry characteristic (D) or K062 hazard codes.


4. Solids Stabilization - Characteristic/K062- Solid sludges, treatment residues, contaminated soils, hazardous debris which carry characteristic (D) or K062 hazard codes.

5. Fuels Blending - Inks, paints, solvents, petroleum hydrocarbons and other appropriate waste materials.

6. Flex Treatment System

Hazardous wastes include aqueous hazardous wastes, acid wastes, caustic wastes, oxidizers, cyanide-bearing wastes, wastewater treatment residues, liquid sludges, and soluble solids. Such wastes may carry one or more of the hazardous waste codes listed in Appendix D. Chemical Oxygen Demand (COD) vials will not be required to be sampled for analysis as they are a known composition with available Safety Data Sheet.

7. Organics Oxidation - Organic contaminated hazardous wastes.

8. Off-Site Facility - Hazardous wastes shipped to the Facility for temporary storage followed by transfer/bulking/consolidation and/or shipment to another treatment, storage or disposal facility; and hazardous wastes shipped to the Facility for transfer/bulking/consolidation and/or shipment to another treatment, storage or disposal facility without on-site storage.

Final approval of a hazardous wastestream and assignment to an appropriate waste management system will be required prior to acceptance of the first shipment. The waste management system assigned to a particular hazardous wastestream during the approval process may be changed after delivery of a shipment of the wastestream, either permanently or on a shipment-specific basis. Such changes in the designated waste management system will be based on various factors, including additional information from the generator, changes in the waste matrix, the current capacity of the waste management system, pre-acceptance screening information, and shipment-specific analytical results.
4.4. **Wastes Not Accepted At Facility**

The Facility does not accept the following waste for processing or storage:

- Hazardous waste bearing the hazard codes F020, F021, F022, F023, F026, F027, and F028
- Hazardous waste mixed with wastes regulated by the Nuclear Regulatory Commission.
- Explosives forbidden from transportation
- Hazardous waste mixed with etiological wastes
- Unstabilized explosives in lab pack containers
- Hazardous waste mixed with Toxic Substances Control Act (TSCA) regulated wastes requiring a commercial storage permit
- Hazardous waste that is also subject to storage controls by the Drug Enforcement Administration

4.5. **Wastestream Reevaluation**

Hazardous wastestreams will be reevaluated as often as necessary to ensure the information maintained by the Facility is accurate and up-to-date. At a minimum, the Facility will reevaluate a wastestream when:

- The Facility is notified that the process or operation generating the hazardous waste has changed in a way that affects the key characteristics of the waste; or
- When the Facility determines that the waste is not consistent with the current wastestream information.

In addition, hazardous wastestreams will be reevaluated on a biennial (two year) basis to ensure the accuracy of information. The biennial wastestream reevaluation will entail obtaining certification from the generator that neither the wastestream information in the current wastestream profile nor the process generating the waste has changed. The applicable wastestream approval procedures specified in this section will be repeated for each hazardous wastestream for which the generator cannot or will not certify that the wastestream information or the process generating the wastestream has not changed. Alternatively, the wastestream may be deactivated.
5. **WASTE SCREENING PRIOR TO ACCEPTANCE**

Shipments of approved hazardous waste, including lab packs and commercial products, will be screened at the Facility or at 1626 Research Way in accordance with the procedures in this section to ensure that the waste has been approved, the waste can be safely stored and subsequently managed, as appropriate, and to verify that the waste identified on the manifest is consistent with the approved waste. Each shipment of hazardous waste will be accompanied by a hazardous waste manifest. Screening will involve a paperwork review and visual inspection to confirm the waste is consistent with current approved wastestream information. Waste pre-acceptance screening will be performed by trained hazardous waste technicians, supervisors, or professionals\(^9\) who are knowledgeable of the waste pre-acceptance screening procedures. Facility management and compliance staff will provide supervisory input during pre-acceptance screening on an as-needed basis.

5.1. **Non-bulk Container Shipments**

Non-bulk container shipments of hazardous wastes, including lab packs, will be screened as follows. The manifest and Land Disposal Restrictions notice will be reviewed and the following information compared against the shipment, and the approved wastestream information:

1. Waste quantity, container count and container type on the manifest are consistent with the shipment;
2. Outer containers are in acceptable condition; compatible with the approved wastestreams; and there are no observable, cracks, gaps, holes, or visible leaking;
3. Hazardous waste codes on the manifest and Land Disposal Restrictions notice (when presented) are consistent with each other, the container labels (outer container labels for lab packs) and permitted for acceptance.
4. Correct labels/markings (outer container labels/markings for lab packs), where applicable, compared to approved wastestream and manifest;
5. Packing list/inventory is consistent with the Facility’s RCRA Subtitle C Permit (lab packs only); and
6. Manifest and Land Disposal Restrictions notice (when presented) are complete and correct.

For lab pack containers, once this review is complete and satisfactory the lab packs can be accepted. A similar procedure may be applied to debris or other media not amenable to sampling and/or analysis. Each non-lab pack container will be sampled and analyzed in accordance with the applicable procedures in Section 6 and the analytical results reviewed and approved prior to acceptance and placement in segregated storage or directly into a waste management system. Once the paperwork review, required analytical results are performed (see Section 6), and verification of container quantity to the consignment is complete, the waste can be accepted. Container shipments of virgin, off-specification, outdated, obsolete, unsalable, or unusable commercial products will also be screened using the applicable procedures outlined in this section.

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\(^9\) See Footnote 2.
5.2. Bulk Container Shipments

Bulk container shipments of hazardous wastes (i.e., containers with greater than 500 gallons capacity) will be screened by the Facility as follows. The manifest and Land Disposal Restrictions notice (when presented) will be reviewed and the following information compared against the shipment and the approved wastestream information:

1. Container type and count, where applicable, on the manifest is consistent with the shipment;

2. Hazardous waste codes on the manifest and Land Disposal Restrictions notice (when presented) are consistent with each other, the container labels, where applicable, and the approved wastestream; and

3. Correct labels/markings, where applicable, compared to approved wastestream and manifest; and

4. Manifest and Land Disposal Restrictions notice (when presented) are complete and correct.

Each bulk hazardous wastestream will also be sampled and analyzed in accordance with the procedures in Section 6. Sampling and analysis may not be conducted on debris or other media not amenable to sampling and/or analysis. The paperwork and the analytical results for bulk shipments will be reviewed and approved in accordance with the requirements of Section 6 prior to acceptance and unloading into a storage tank or waste management system. Bulk shipments of virgin, off-specification, outdated, obsolete, unsalable, or unusable commercial products will also be screened using the applicable procedures outlined in this section.

5.3. Management of Waste Discrepancies

Discrepancies in the type or quantity of waste from that specified on the uniform hazardous waste manifest identified during screening at 1626 Research Way or the Facility are reconciled by contacting the generator (or transporter as the case warrants) of the waste. The Facility contacts the generator to resolve the discrepancies and notes the discrepancy (or resolution) on the manifest or accompanying information. Depending on the nature of the discrepancy, the Facility may perform some or all of the following general activities to resolve a discrepancy:

- Resolve the discrepancy with the generator and accept the waste
- Resolve the discrepancy with the generator by collecting additional data from the generator and go through the wastestream approval process as a new wastestream appropriate to the situation
- Reject the waste and return to the generator or ship to an alternate designated treatment storage and disposal facility following the procedures in 40 CFR Part 264.72
- Filing an Unmanifested Waste Report, where necessary

Containers that are determined to be non-conforming from a type perspective will be electronically controlled to prevent a container from further management, being
processed, or being transferred until the discrepancy is resolved by the Facility. Electronic controls for containers can be initiated by hazardous waste technicians, supervisors, professionals, or other authorized persons. Examples of non-conforming wastes where electronic controls are initiated for type discrepancies include non-hazardous waste that has been determined to exhibit a characteristic of hazardous waste, wastes determined to contain materials prohibited from acceptance (See Section 4.4) at the Facility, wastes with hazard codes that do not match hazard codes approved for the wastestream, or similar situations.

If a container(s) is determined to be non-conforming for hazard codes (whether presented to Heritage as hazardous or non-hazardous), the USEPA hazard code(s) will be electronically added and the container(s) will be relabeled as necessary, and managed for the situation until the appropriate discrepancy resolution activities described above have been completed.
6. WASTE SAMPLING AND ANALYSIS

Heritage, at the Facility or 1626 Research Way, will sample and analyze hazardous wastes prior to acceptance at the Facility, as described in this section; to further verify that the waste has been approved; to confirm storage compatibility; and to confirm that the wastestream has been assigned to an appropriate waste management system. Waste sample analytical results will be reviewed in accordance with the procedures specified in this waste analysis plan prior to accepting the waste. Samples collected for Facility generated wastes will follow the applicable procedures described in this section and Appendix B.

Hazardous waste samples will be collected by trained hazardous waste technicians, supervisors, or professionals\(^{10}\) who are knowledgeable of the requirements of this waste analysis plan (see Appendix B). Analyses will be performed by hazardous waste technicians, supervisors, or professionals\(^{11}\) in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed. Alternatively, the Facility may use a Heritage location or a third party laboratory to conduct testing as described in Footnote 1. Appendix B contains quality assurance/quality control procedures for analytical activities. Review of waste sampling and analysis data will be performed by experienced personnel knowledgeable of the applicable criteria specified by the Heritage RCRA permit, including this waste analysis plan.

Waste analysis will be performed in two stages for incoming hazardous wastes. Stage 1 will include analysis of parameters necessary to further confirm waste identification and storage compatibility. Stage 1 analysis will be performed as verification screening once the waste crosses the boundary of the Facility. Stage 1 analyses are mandatory for each hazardous waste prior to acceptance, with the exception of lab packs and media that are not amenable to sampling, as described below. Containers placed in storage will be segregated based on the results of the Stage 1 analysis and other waste specific information gathered during the approval phase (Section 4) and pre-acceptance screening (Section 5). The parameters chosen for Stage 1 analysis and the rationale for their selection are specified in Section 7 of this waste analysis plan. Stage 1 sampling will be implemented by trained hazardous waste technicians, supervisors, or professionals\(^{12}\). Acceptable analytical methods are specified in Appendix A.

Stage 2 analysis for incoming hazardous wastestreams will consist of mandatory analyses performed on each container of hazardous waste, and supplemental analyses based on the specific waste type and/or the need to further characterize a particular hazardous waste prior to treatment. Stage 2 mandatory analyses will be performed on each hazardous waste with the exception of waste managed in the Off-site Facility waste management system, lab packs, and media that are not amenable to sampling. Stage 2 mandatory analyses will include analysis of parameters necessary to confirm the designated waste management system for a particular waste. Stage 2 sampling and analysis will be implemented by trained hazardous waste technicians, supervisors, professionals\(^{13}\), or a commercial laboratory. Stage 2 analyses and the rationale for their selection are specified in Section 7 of this waste analysis plan. Samples for Stage 2

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\(^{10}\) See Footnote 2.

\(^{11}\) See Footnote 2.

\(^{12}\) See Footnote 2.

\(^{13}\) See Footnote 2.
analysis will be collected by Heritage at 1626 Research Way, or by the Facility after the waste crosses the boundary of the Facility.

Media not amenable to sampling, such as batteries, light bulbs, contained gases, equipment, debris, etc. will require visual inspection for container integrity and waste appearance. Information gathered during this inspection screening will be compared to approved wastestream information. In addition, a complete paperwork review in accordance with the pre-acceptance screening procedures specified in Section 5 will be performed for these wastes prior to acceptance. Lab packs will require a complete paperwork review including a review of the packing list in accordance with the pre-acceptance screening procedures specified in Section 5 prior to acceptance.

Wastes managed in the Off-site Facility waste management system will require analysis of the Stage 1 mandatory analyses specified in Section 7.4. Because wastes managed in the Off-site Facility waste management system will not be treated at the Facility, Stage 2 analyses are not required. Waste not undergoing a minimum of 10% of Information gathered during Stage 1 analyses will be compared to approved wastestream information. In addition, a complete paperwork review in accordance with the pre-acceptance screening procedures specified in Section 5 will be performed for these wastes prior to acceptance. This review procedure will be sufficient to identify potential non-conformance situations for a waste that will be subsequently shipped to another location for final treatment/disposal.

6.1. Non-bulk Container Shipments

Following completion of pre-acceptance screening as described in Section 5, hazardous wastes in non-bulk containers will be sampled at the Facility and analyzed for Stage 1 mandatory analyses as follows and as specified by Section 7 for each waste management system.

<table>
<thead>
<tr>
<th>Non-Bulk Containers - Number of Containers on a Trailer</th>
<th>Number of Verification Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 through 23 Containers</td>
<td>2</td>
</tr>
<tr>
<td>24 or more Containers</td>
<td>7</td>
</tr>
</tbody>
</table>

For trailers with 24 or more non-bulk containers, verification samples will be collected from containers using the following general order of precedence:

i. Containers will be selected for sampling that are intended for processing in the seven different Waste Management Systems at the Facility as described in Section 6. By way of example, four containers will be selected for verification sampling from four different waste management systems.

ii. Containers will be selected for sampling from different generator facilities.

iii. Containers will be selected for sampling based on management discretion. For example, loads may not have generator or waste management system variability to allow for 6.1.i and 6.1.ii. above.

Sampling and analysis of Stage 1 mandatory parameters for storage compatibility will be performed in accordance with the following procedures:

1. A representative sample will be collected from each container. Sampling will be performed utilizing as guidance SW-846, as incorporated by
reference at 40 CFR 261, Appendix I, or other methods appropriate to
taste characterization activities (see Appendix B).

2. Individual container samples that are from the same wastestream, and
manifest, (See Section 7) may be composited prior to testing.

3. These composite samples will be analyzed for the mandatory Stage 1
analytical parameters specified in Section 7.

4. Analytical results from the Stage 1 sampling and analysis will be reviewed
to determine storage compatibility and consistency with wastestream
profile information. Other available information, such as wastestream
profile information, hazardous waste manifest information, and DOT
shipping names will be considered when determining proper storage
compatibility. However, Stage 1 analytical results will take precedence over
other information in making this determination where conflicts are noted.
Heritage or the Facility may reassign a waste to a new waste management
system based on the results of the Stage 1 analysis.

The parameters chosen for Stage 1 analysis and the rationale for their selection
are specified in Section 7.4. Acceptable analytical methods are specified in
Appendix A.

Stage 2 analysis to confirm the assigned waste management system will be
performed in accordance with the following procedures:

1. Samples will be collected at 1626 Research Way or the Facility and
analyzed for mandatory Stage 2 parameters as described in this Waste
Analysis Plan. In the event that analysis of mandatory Stage 2 parameters
is not completed before the waste crosses the Facility boundary,
mandatory Stage 2 analysis will be completed prior to treatment at the
Facility. Prior to placement of a container from a particular hazardous
wastestream into the designated waste management system, a
representative sample will be collected from each container. Sampling will
be performed utilizing as guidance SW-846, as incorporated by reference
at 40 CFR 261, Appendix I, or other methods appropriate to waste
characterization activities (see Section B). The same samples collected for
Stage 1 analysis may be used for Stage 2 analysis.

2. Individual container samples from the same waste stream (See Section 7)
may be composited prior to testing.

3. These samples will be analyzed for the mandatory Stage 2 analytical
parameters specified for the designated waste management system.
Additional supplementary Stage 2 analyses will be performed by the
Facility, or a Third Party Laboratory based on the specific waste type or the
need to further characterize a particular hazardous waste prior to
treatment\(^\text{14}\). These parameters are specified for each waste management
system in Section 7.4.

4. Analytical results from the Stage 2 sampling and analysis will be reviewed
to confirm the designated waste management system and to further verify
consistency with approved wastestream information, where applicable.

\(^{14}\) See Footnote 1.
Other available information, such as wastestream profile information, hazardous waste manifest information and DOT shipping names may be considered when verifying the designated waste management system. However, Stage 2 analytical results will take precedence over other information in making this determination where conflicts are noted.

5. Stage 2 results will be reviewed prior to introducing a hazardous waste to the designated waste management system. Heritage or the Facility may reassign a waste to a new waste management system based on the results of the Stage 2 analysis.

The parameters chosen for Stage 2 analyses and the rationale for their selection are specified in Section 7.4. Acceptable analytical methods are specified in Appendix A. Stage 1 and Stage 2 analyses may be performed concurrently at the Facility to expedite treatment of a particular wastestream on a wastestream specific basis.

6.2  Bulk Container Shipments

Following completion of pre-acceptance screening as described in Section 5, hazardous wastes delivered in bulk containers (i.e., containers with greater than 500 gallons capacity) will be sampled and analyzed according to the following procedures:

1. Prior to acceptance and unloading of a bulk shipment, the Facility will collect a representative sample from each container. Sampling will be performed utilizing as guidance SW-846, as incorporated by reference in 40 CFR 261, Appendix I, or other methods appropriate to waste characterization activities (see Section B). Bulk shipments will require completion and review of the required analysis prior to management in the designated waste management system in accordance with the procedures specified in this section.

2. Samples for Stage 1 analysis will be collected for each bulk shipment of liquids after the hazardous waste crosses the Facility boundary. With regard to bulk shipments of hazardous waste solids, samples for Stage 1 analysis will be collected from 10% of the shipments of each wastestream from each generator each day. Samples for Stage 1 bulk shipments of hazardous waste solids may be collected contemporaneously with unloading into the Facility's waste management systems. 100% of the shipments of bulk hazardous waste solids will undergo visual confirmation contemporaneously with unloading into the Facility's waste management system. Additional supplemental Stage 2 analyses will be performed by the Facility based on the specific waste type or the need to further characterize particular hazardous wastes prior to treatment. Samples from bulk container shipments of the same wastestream from the same generator may be composited, with no more than ten (10) samples per composite. Stage 1 and Stage 2 parameters are specified for each waste management system in Section 7.4.

3. Stage 1 analytical results will be completed and reviewed prior to unloading bulk shipments (or contemporaneous with unloading as described in Item 2 above) to determine compatibility with the receiving unit's contents and to further verify consistency with wastestream profile information. Other
available information, such as wastestream profile information, hazardous waste manifest information, and DOT shipping names will be considered when verifying compatibility with the receiving unit's contents. However, Stage 1 analytical results will take precedence over other information in making this determination where conflicts are noted. Heritage may reassign a waste to a new waste management system based on the analytical results of the Stage 1 analyses.

4. Mandatory Stage 2 results will be completed and reviewed prior to treatment of a hazardous waste in the designated waste management system. These analyses will be used to confirm the designated waste management system. Other available information, such as wastestream profile information, hazardous waste manifest information, and DOT shipping names will be considered when confirming the designated waste management system. However, mandatory Stage 2 analytical results will take precedence over other information in making this determination where conflicts are noted. Heritage or the Facility may reassign a waste to a new waste management system based on the analytical results of the Stage 2 analyses.

7. WASTE MANAGEMENT SYSTEM ANALYTICAL PARAMETERS

The Facility will analyze (see Footnote 1) hazardous wastes in accordance with the procedures specified in Sections 4 - 6 of this waste analysis plan. As described in Section 6, each waste management system requires mandatory analysis of specific parameters, with additional supplemental parameters analyzed as required by Facility management based on the specific waste type or the need to further characterize a particular hazardous waste prior to treatment.

7.1. General Testing Rationale

The general rationale for the analytical parameters specified in this section includes:

- Identification of physical properties and chemical characteristics of each hazardous wastestream during pre-approval analysis;
- Determination of the appropriate procedures for management of each hazardous wastestream;
- Verification of waste profile for each shipment;
- Verification of storage compatibility; and
- Confirmation that an appropriate waste management system has been assigned.

The rationale for the selection of specific analyses required for a particular waste management system is described in Section 7.4.

7.2. Mandatory Stage 1 Analyses

Mandatory Stage 1 analyses include parameters that are required to determine wastestream compatibility for storage purposes and to identify gross nonconforming features of the wastestream. Mandatory Stage 1 analyses specific
to each waste management system are specified in Section 7.4 of this waste analysis plan.

7.3. **Mandatory and Supplemental Stage 2 Analyses**

The Stage 2 mandatory and supplemental analytical parameters are specified in Section 7.4 for each waste management system. Stage 2 mandatory analyses are required to confirm that the assigned waste management system is an appropriate and effective method of treatment and to identify nonconforming features of the wastestream that may require specific operational adjustments or assignment to an alternative waste management system. Stage 2 supplemental analyses are additional analyses performed by the Facility to further characterize a particular hazardous wastestream prior to treatment.

7.4. **Waste Management Systems Analysis**

The Stage 1 mandatory and Stage 2 mandatory and supplemental analyses are specified for each waste management system in this section. This section also specifies the rationale for each analysis. Acceptable analytical methods for each parameter specified in this section are listed in Appendix A.
AQUEOUS TREATMENT SYSTEM

Hazardous wastes treated in the aqueous treatment system include aqueous hazardous wastes, acid wastes, caustic wastes, oxidizers, cyanide-bearing wastes, wastewater treatment residues, liquid sludges, and soluble solids. Such wastes may carry one or more of the hazardous waste codes listed in Appendix D.

<table>
<thead>
<tr>
<th>STAGE 1:</th>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>pH=3, storage in Mixed Waste Acid Tanks; pH&gt;3, storage in Caustic/Sludge Tanks</td>
<td></td>
</tr>
<tr>
<td>Appearance (physical description)</td>
<td>Reference to approved wastestream</td>
<td></td>
</tr>
<tr>
<td>Receiving unit compatibility (direct unload only)15</td>
<td>Verify compatibility with receiving unit contents</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STAGE 2:</th>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate/nitrite strip test</td>
<td>Verify compatibility with waste management system contents; determine presence nitrates/nitrates to evaluate wastestream treatability</td>
<td></td>
</tr>
<tr>
<td>Receiving unit compatibility</td>
<td>Verify compatibility with receiving unit contents (container storage)</td>
<td></td>
</tr>
<tr>
<td>Hexavalent chromium</td>
<td>Determine need for reduction to trivalent chromium</td>
<td></td>
</tr>
<tr>
<td>Phenols</td>
<td>Determine need for phenol oxidation</td>
<td></td>
</tr>
<tr>
<td>Cyanide, Free (Hach Kit or Heritage Perstorp)</td>
<td>Screen for presence of cyanide</td>
<td></td>
</tr>
<tr>
<td>Nickel, total</td>
<td>Determine need for metals treatment</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplemental Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paint filter liquids test 16</td>
<td>Identify free liquids</td>
</tr>
<tr>
<td>Flash point</td>
<td>Verify wastestream profile; flashpoint &gt;140°F for aqueous system</td>
</tr>
<tr>
<td>Nickel treat/nickel spike treat</td>
<td>Evaluate presence of chelators; determine metals treatability</td>
</tr>
<tr>
<td>Acidity</td>
<td>Verify pH adjustment requirements</td>
</tr>
<tr>
<td>Alkalinity</td>
<td>Verify pH adjustment requirements</td>
</tr>
<tr>
<td>Inorganic acid concentrations</td>
<td>Verify tank material compatibility</td>
</tr>
<tr>
<td>Cyanide, total (pH&gt;3 wastes only)</td>
<td>Verify total cyanide levels</td>
</tr>
<tr>
<td>Bench scale CDU evaluation</td>
<td>Verify cyanide destruction unit (CDU) treatment</td>
</tr>
<tr>
<td>Total petroleum hydrocarbons (TPH)</td>
<td>Evaluate impact on dewatering oily wastes</td>
</tr>
<tr>
<td>Density</td>
<td>Verify density for billing purposes</td>
</tr>
<tr>
<td>Arsenic, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Barium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Cadmium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Chromium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Lead, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Mercury, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Selenium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Silver, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
</tbody>
</table>

15 This analysis performed as Stage 1 mandatory only for shipments that are unloaded directly into a waste management unit other than container storage.

16 This analysis mandatory for containerized wastes to be stored in solids only container storage.
FLEX TREATMENT SYSTEM

Hazardous wastes treated in the flex treatment system include aqueous hazardous wastes, acid wastes, caustic wastes, oxidizers, cyanide-bearing wastes, wastewater treatment residues, liquid sludges, and soluble solids. Such wastes may carry one or more of the hazardous waste codes listed in Appendix D. Chemical Oxygen Demand (COD) vials will not be required to be sampled for analysis as they are a known composition with available Material Safety Data Sheet.

<table>
<thead>
<tr>
<th>STAGE 1:</th>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH</td>
<td>pH&lt;3, stored segregated from incompatible waste</td>
<td></td>
</tr>
<tr>
<td>Appearance (physical description)</td>
<td>Reference to approved wastestream</td>
<td></td>
</tr>
<tr>
<td>Receiving unit compatibility (direct unload only)</td>
<td>Verify compatibility with receiving unit contents</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STAGE 2:</th>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitrate/nitrite strip test</td>
<td>Verify compatibility with waste management system contents; determine presence nitrates/nitrates to evaluate wastestream treatability</td>
<td></td>
</tr>
<tr>
<td>Receiving unit compatibility</td>
<td>Verify compatibility with receiving unit contents (container storage)</td>
<td></td>
</tr>
<tr>
<td>Hexavalent chromium</td>
<td>Determine need for reduction to trivalent chromium</td>
<td></td>
</tr>
<tr>
<td>Cyanide, Free (Hach Kit or Heritage Perstorp)</td>
<td>Screen for presence of cyanide</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplemental Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acidity</td>
<td>Verify pH adjustment requirements</td>
</tr>
<tr>
<td>Cyanide, total (pH&gt;3 wastes if positive for cyanide by Free method)</td>
<td>Verify total cyanide levels</td>
</tr>
<tr>
<td>Arsenic, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Barium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Cadmium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Chromium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Lead, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Mercury, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Selenium, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
<tr>
<td>Silver, total</td>
<td>Verify wastestream profile; identify level of metals treatment required</td>
</tr>
</tbody>
</table>

17 This analysis performed as Stage 1 mandatory only for shipments that are unloaded directly into a waste management unit other than container storage.
SOLIDS STABILIZATION SYSTEM

Hazardous wastes managed in the solids stabilization system include solid sludges, treatment residues, contaminated soils, and hazardous debris. Such wastes may carry one or more of the hazardous waste codes listed in Appendix D.

| STAGE 1: |  |
|**Mandatory Analyses** | **Rationale** |
| Appearance (physical description) | Reference to approved wastestream |
| Visible free liquids | Identify potential for free liquids |

| STAGE 2: |  |
|**Mandatory Analyses** | **Rationale** |
| Hexavalent chromium | Determine need for reduction to trivalent chromium |
| Cyanide (by Hach kit) | Screen for high cyanide-containing materials |
| Aqueous Compatibility | Determine compatibility of wastes in an aqueous matrix |
| Alkaline Compatibility | Determine Compatibility of wastes in a stabilization matrix |

| **Compatibility Determination** | **Rationale** |
| Consolidation | Verify compatibility of consolidated wastes |
| Stabilization Compatibility | Verify compatibility with stabilization processes |
| Alkalinity of Waste Matrix | Determine need for addition and amount of alkaline reagent |

| **Supplemental Analyses** | **Rationale** |
| Paint filter liquids test | Identify free liquids |
| Flash point | Verify wastestream profile; flashpoint >140°F for solids stabilization system |
| Cyanide, total | Verify cyanide meets land disposal restrictions (LDR) |
| Cyanide, amenable | Verify cyanide meets land disposal restrictions (LDR) |
| Density | Verify density for billing purposes |
| Arsenic, total | Verify wastestream profile |
| Barium, total | Verify wastestream profile |
| Cadmium, total | Verify wastestream profile |
| Chromium, total | Verify wastestream profile |
| Lead, total | Verify wastestream profile |
| Mercury, total | Verify wastestream profile |
| Nickel, total | Verify wastestream profile |
| Selenium, total | Verify wastestream profile |
| Silver, total | Verify wastestream profile |

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18 Not mandatory for wastes that are not consolidated.
19 Must be completed with a pass result prior to waste treatment. Test is performed one time only unless generating process has changed, at which time the test must be repeated once.
20 This analysis mandatory for containerized wastes to be stored in solids only container storage.
4 Analysis performed for wastestream unless segregated batch treatment performed for single waste stream using treatment formula established for single waste stream.
SOLIDS STABILIZATION SYSTEM - CHARACTERISTIC/K062

Characteristic and K062 hazardous wastes managed in the solids stabilization system, including solid sludges, treatment residues, contaminated soils, and hazardous debris. Such wastes may carry one or more of hazardous waste codes D004-D011 or K062.

### Stage 1:

<table>
<thead>
<tr>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance (physical description)</td>
<td>Reference to approved wastestream</td>
</tr>
<tr>
<td>Visible free liquids</td>
<td>Identify potential for free liquids</td>
</tr>
</tbody>
</table>

### Stage 2:

<table>
<thead>
<tr>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hexavalent chromium</td>
<td>Determine need for reduction to trivalent chromium</td>
</tr>
<tr>
<td>Cyanide (by Hach kit)</td>
<td>Screen for high cyanide-containing materials</td>
</tr>
<tr>
<td>Aqueous Compatibility</td>
<td>Determine compatibility of wastes in an aqueous matrix</td>
</tr>
<tr>
<td>Alkaline Compatibility</td>
<td>Determine Compatibility of wastes in a stabilization matrix</td>
</tr>
<tr>
<td>Consolidation Determination&lt;sup&gt;21&lt;/sup&gt;</td>
<td>Verify compatibility of consolidated wastes</td>
</tr>
<tr>
<td>Stabilization Compatibility&lt;sup&gt;22&lt;/sup&gt;</td>
<td>Verify compatibility with stabilization processes</td>
</tr>
<tr>
<td>Alkalinity of Waste Matrix&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Determine need for addition and amount of alkaline reagent</td>
</tr>
</tbody>
</table>

### Supplemental Analyses

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paint Filter Liquids test&lt;sup&gt;23&lt;/sup&gt;</td>
<td>Identify free liquids</td>
</tr>
<tr>
<td>Flash point</td>
<td>Verify wastestream profile; flashpoint &gt;140°F for solids stabilization system</td>
</tr>
<tr>
<td>Cyanide, total</td>
<td>Verify cyanide meets land disposal restrictions (LDR)</td>
</tr>
<tr>
<td>Cyanide, amenable</td>
<td>Verify cyanide meets land disposal restrictions (LDR)</td>
</tr>
<tr>
<td>Density</td>
<td>Verify density for billing purposes</td>
</tr>
<tr>
<td>Arsenic, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Barium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Cadmium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Chromium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Lead, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Mercury, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Nickel, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Selenium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Silver, total</td>
<td>Verify wastestream profile</td>
</tr>
</tbody>
</table>

---

<sup>21</sup> Not mandatory for wastes that are not consolidated.

<sup>22</sup> Must be completed with a pass result prior to waste treatment. Test is performed one time only unless generating process has changed, at which time the test must be repeated once.

<sup>23</sup> This analysis mandatory for containerized wastes to be stored in solids only container storage.

<sup>4</sup> Analysis performed for wastestream unless segregated batch treatment performed for single waste stream using treatment formula established for single waste stream.
FUELS BLENDING SYSTEM

Hazardous wastes managed in the fuels blending system include inks, paints, solvents, petroleum hydrocarbons and other appropriate waste materials. Such wastes may carry one or more of the hazardous waste codes listed in Appendix D.

<table>
<thead>
<tr>
<th>STAGE 1:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mandatory Analyses</strong></td>
<td><strong>Rationale</strong></td>
</tr>
<tr>
<td>pH</td>
<td>Proper storage segregation</td>
</tr>
<tr>
<td>Appearance (physical description)</td>
<td>Reference to approved wastestream</td>
</tr>
<tr>
<td>Receiving unit compatibility (direct unload only)(^\text{24})</td>
<td>Verify compatibility with receiving unit contents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STAGE 2:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mandatory Analyses</strong></td>
<td><strong>Rationale</strong></td>
</tr>
<tr>
<td>Receiving unit compatibility (container storage)</td>
<td>Verify compatibility with receiving unit contents</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Supplemental Analyses</strong></th>
<th><strong>Rationale</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Polychlorinated biphenyls (PCBs)</td>
<td>Identify potential PCBs; maximum 50 ppm</td>
</tr>
<tr>
<td>Flash point</td>
<td>Identify high flash point wastes for management as non-flammable/non-combustible</td>
</tr>
<tr>
<td>Chlorine, percent</td>
<td>Verify fuels specifications per end user</td>
</tr>
<tr>
<td>Water, percent</td>
<td>Verify fuels specifications per end user</td>
</tr>
<tr>
<td>BTU</td>
<td>Verify fuels specifications per end user</td>
</tr>
<tr>
<td>Sulfur, percent</td>
<td>Verify fuels specifications per end user</td>
</tr>
<tr>
<td>Halogens, total (TX)</td>
<td>Verify fuels specifications per end user</td>
</tr>
<tr>
<td>Density</td>
<td>Verify density for billing purposes</td>
</tr>
<tr>
<td>Arsenic, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Barium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Cadmium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Chromium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Lead, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Mercury, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Nickel, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Selenium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Silver, total</td>
<td>Verify wastestream profile</td>
</tr>
</tbody>
</table>

\(^{24}\)This analysis performed as Stage 1 mandatory only for shipments that are unloaded directly into a waste management unit other than container storage.
ORGANICS OXIDATION SYSTEM

Hazardous wastes managed in the organics oxidation system include organic contaminated hazardous wastes. Such wastes may carry one or more of the hazardous waste codes listed in Appendix D.

<table>
<thead>
<tr>
<th>STAGE 1:</th>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>Proper storage segregation</td>
<td></td>
</tr>
<tr>
<td>Appearance (physical description)</td>
<td>Reference to approved wastestream</td>
<td></td>
</tr>
<tr>
<td>Receiving unit compatibility (direct unload only)</td>
<td>Verify compatibility with receiving unit contents</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>STAGE 2:</th>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Receiving unit compatibility (container storage)</td>
<td>Verify compatibility with receiving unit contents</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplemental Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemical oxygen demand (COD)</td>
<td>Correlate to organic content</td>
</tr>
<tr>
<td>Total organic carbon (TOC)</td>
<td>Verify organic content</td>
</tr>
<tr>
<td>Flash point</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Cyanide, free</td>
<td>Verify free cyanide level; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Phenols</td>
<td>Verify phenol level; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Total petroleum hydrocarbons (TPH)</td>
<td>Determine petroleum hydrocarbon levels</td>
</tr>
<tr>
<td>Density</td>
<td>Verify density for billing purposes</td>
</tr>
<tr>
<td>Arsenic, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Barium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Cadmium, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Chromium, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Copper, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Lead, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Mercury, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Nickel, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Selenium, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
<tr>
<td>Silver, total</td>
<td>Verify wastestream profile; upper limit per pretreatment permit</td>
</tr>
</tbody>
</table>

25 This analysis performed as Stage 1 mandatory only for shipments that are unloaded directly into a waste management unit other than container storage.
OFF-SITE FACILITY

Hazardous wastes managed in the off-site facility program include hazardous wastes shipped to the Facility for temporary storage followed by transfer/bulking/consolidation and/or shipment to another treatment, storage or disposal facility; and hazardous wastes shipped to the Facility for transfer/bulking/consolidation and/or shipment to another treatment, storage or disposal facility without on-site storage. Wastes managed in the off-site facility waste management system may carry one or more of the hazardous waste codes listed in Appendix D. Wastes managed in the off-site facility waste management system will be analyzed in accordance with the following Stage 1 mandatory analyses. Supplemental Stage 1 analyses will be performed as required by facility management based on the specific waste type and/or the need to further characterize a particular hazardous wastestream prior to shipment. Because wastes managed in the off-site facility waste management system will not be treated at the Facility, Stage 2 analyses are not necessary.

<table>
<thead>
<tr>
<th>Mandatory Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH(^{26})</td>
<td>Proper storage segregation</td>
</tr>
<tr>
<td>Appearance (physical description)</td>
<td>Reference to approved wastestream</td>
</tr>
<tr>
<td>Consolidation Compatibility(^{27})</td>
<td>Verify compatibility of consolidated wastes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supplemental Analyses</th>
<th>Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Polychlorinated biphenyls (PCBs)</td>
<td>Identify potential PCBs</td>
</tr>
<tr>
<td>Btu</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Halogens, total (TX)</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Cyanide, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Paint filter liquids test(^{28})</td>
<td>Identify free liquids</td>
</tr>
<tr>
<td>Density</td>
<td>Verify density for billing purposes</td>
</tr>
<tr>
<td>Arsenic, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Barium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Cadmium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Chromium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Lead, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Mercury, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Nickel, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Selenium, total</td>
<td>Verify wastestream profile</td>
</tr>
<tr>
<td>Silver, total</td>
<td>Verify wastestream profile</td>
</tr>
</tbody>
</table>

\(^{26}\) For inorganic, aqueous or water soluble wastestream only

\(^{27}\) Not mandatory for wastes that are not consolidated. See procedures in Appendix A

\(^{28}\) This analysis mandatory for containerized wastes to be stored in solids only container storage.
8. CHARACTERIZATION OF FACILITY-GENERATED HAZARDOUS WASTE

The Facility has the potential to generate hazardous waste as a result of hazardous waste treatment and storage operations. The Facility will assess generated wastes in accordance with the requirements of 40 CFR 262.11, as incorporated by reference at 329 IAC 3.1-7-1, using either analysis or knowledge of the waste and the process(es) generating the waste. Figure 8-1 shows the general waste characterization procedures for Facility generated wastes. Facility-generated hazardous wastes may be accumulated on-site for ninety (90) days or less in a ninety-day accumulation area(s) or stored on-site in a permitted storage area. Satellite accumulation areas may also be utilized, as appropriate. Many wastes generated on-site will be deemed hazardous by the "mixture rule" (40 CFR 261.3(a)(2)(iv), as incorporated by reference at 329 IAC 3.1-6-1) or the "derived from rule" (40 CFR 261.3(c)(2), as incorporated by reference at 329 IAC 3.1-6-1).

Hazardous wastes generated by the Facility fall into two primary categories; wastes that meet LDR treatment standards, and wastes that do not meet LDR treatment standards. Wastes that meet LDR treatment standards primarily originate from residues generated by the aqueous treatment and solids stabilization management systems. These wastes will typically be managed in the Heritage Landfill near Roachdale, Indiana, and require detailed sampling and analysis efforts to demonstrate that they achieve compliance with applicable LDR treatment standards. These sampling and analysis demonstrations will be discussed here and in Section 9. The second primary category of wastes (those that do not meet LDR standards) are typically treated at other permitted facilities prior to ultimate disposal. Wastes managed by the Facility in the fuels blending system and subsequently shipped to cement kilns or incinerators are typical of this second category of wastes.

Wastes generated from the Aqueous Treatment System and Solids Stabilization System are typically listed hazardous waste according to the "derived from rule" (40 CFR 261.3(c)(2) as incorporated by reference at 329 IAC 3.1-6-1) because it is derived from the treatment of various listed hazardous wastes. Based on the "derived from rule" these listed wastes carry all of the hazardous waste codes for the listed wastes of which it is a mixture. Following treatment in the Aqueous Treatment System and Solids Stabilization System at the Facility, the hazardous wastes will typically meet LDR standards for which they are listed and will no longer exhibit the characteristics of a hazardous waste.

Wastes generated by the Aqueous Treatment System - Characteristic/K062 and the Solids Stabilization System - Characteristic/K062 during treatment of characteristic and K062 hazardous wastes will be decharacterized during stabilization, and thus rendered non-hazardous prior to shipment off-site. Waste residues originating with listed hazard code K062, when lime stabilized, are not listed hazardous wastes per 40 CFR 261.3(c)(2)(ii)(A). These wastestreams will be subject to verification sampling and analysis in accordance with the procedures specified in Section 9 of this waste analysis plan prior to shipment off-site. This verification sampling and analysis is designed to confirm that the wastestreams do not exhibit any characteristic of a hazardous waste as defined by 40 CFR 261 Subpart C, as incorporated by reference at 329 IAC 3.1-6.2.
Figure 8-1
Heritage Environmental Services, LLC
Indianapolis, Indiana
Hazardous Waste Characterization Procedures

Is the material a solid waste Per 40 CFR Part 261?
Yes → Material is not a solid waste.
No → Is the waste excluded Under CFR 261.4(a) or (b)?
Yes → Waste is not a hazardous waste.
No → Does the waste meet any of the listed descriptions in 40 CFR Part 261, Subpart D?
 OR
 Does the waste mixed with a listed hazardous waste?
 OR
 Is the waste derived from the treatment, storage, or disposal of a listed hazardous waste?
Yes → Has the waste been delisted in accordance with 40 CFR 260.20 and 260.227?
 OR
 Does the mixture or derived from residue qualify for any of the exclusions from the mixture and derived-from rules in 40 CFR 261.3?
Yes → Waste is a listed hazardous waste.
No → Waste is not a listed hazardous waste.

Does the waste exhibit one or more characteristics of hazardous waste in 40 CFR Part 261, Subpart C?
Yes → Waste is a characteristic hazardous waste.
No → Waste is not a hazardous waste.

For purposes of the Land Disposal Restrictions Regulations program of 40 CFR Part 268, does the listed waste exhibit a characteristic of hazardous waste in 40 CFR Part 261, Subpart C that is not addressed for listed hazard code in 40 CFR Part 268?
Yes → Waste is a listed and characteristic hazardous waste.
No → Waste is a listed hazardous waste only.
Hazardous waste determinations for other on-site generated wastes will involve analysis and/or knowledge as appropriate. Available information collected during the approval and pre-acceptance of the wastestreams managed in the process generating the waste at Heritage may be used to make these determinations. This information may include wastestream survey information, pre-approval analysis results, and/or wastestream pre-acceptance testing results. Additional analysis may be performed as necessary. Any parameters chosen for additional analysis and the rationale for their selection will be determined on a case-by-case basis according to the waste type and the intended method of management. Any parameters chosen for additional analysis necessary for management at an Off-Site Facility will be dictated by the off-site facility's waste analysis plan and will be analyzed by that facility, Heritage, the Facility, or a Third Party Laboratory during the approval process. Any analysis performed on on-site generated waste will be in accordance with current required methodology, where applicable.

The Facility will reevaluate its hazardous waste determinations for Facility-generated wastes as often as necessary to ensure the information maintained is accurate and up-to-date. At a minimum, Heritage will reevaluate a wastestream when:

- The process or operation generating the hazardous waste has changed in a way that changes the key characteristics of the waste; or
- When an off-site location determines that the Facility-generated waste is not consistent with the current wastestream information.

9. 

LAND DISPOSAL RESTRICTIONS

The Facility will ensure compliance with the Land Disposal Restrictions requirements specified at 40 CFR Part 268 through a coordinated program consisting of review of incoming hazardous waste Land Disposal Restrictions notices, dose/response testing to confirm stabilization reagent formulation, and sampling and analysis of wastes from the Aqueous Treatment Systems and Solids Stabilization Systems. The specific provisions of this compliance program are discussed in this section.

9.1. Hazardous Wastes Accepted from Off-site Sources

In accordance with the Land Disposal Restrictions at 40 CFR Part 268, the generator of a hazardous waste must determine if the waste is restricted, as well as determine the appropriate treatment standard(s) that must be met prior to land disposal. The applicable treatment standard(s), including underlying hazardous constituents for characteristic wastes, must be determined at the point of initial generation prior to any treatment. The generator must use analysis or knowledge of the waste to make this determination. The generator is also required to submit a notice to the designated facility that the waste is subject to a restriction. Heritage provides blank forms to its customers to assist them with this compliance requirement. However, Heritage will accept Land Disposal Restrictions notices on alternative forms. An example Heritage Land Disposal Restrictions notice form is provided in Appendix E. This form is subject to modification due to changes in regulations, Heritage corporate policy or customer needs.

Hazardous waste shipments accepted by the Facility that are subject to the Land Disposal Restrictions will be accompanied by a Land Disposal Restrictions (LDR) notice. A one-time LDR notice may also be submitted in lieu of a shipping notice
and maintained in the Facility operating record. As required by 40 CFR 268.7, this notice is to include:

- Identification of the appropriate hazardous waste code(s) subject to the Land Disposal Restrictions;
- Identification of F001-F005, F039 constituents or underlying hazardous constituents, as appropriate;
- The manifest number associated with the shipment of waste;
- Waste analysis data, where available; and
- Signed certification, when appropriate.

As described in Section 5, the Land Disposal Restrictions notice will be reviewed by Heritage at 1626 Research Way or the Facility during the pre-acceptance screening of each hazardous waste shipment and will be maintained as required by 40 CFR 264.73 and 40 CFR 268.7. Alternately, the LDR notice will be reviewed and approved by Heritage during the wastestream approval process and maintained as a one-time notice in the Facility operating record.

Except as provided in 40 CFR 268.50, hazardous wastes subject to Land Disposal Restrictions will not be stored for longer than one (1) year at the Facility. The storage date will be indicated on the container for each hazardous waste stored by the Facility that is subject to Land Disposal Restrictions. If a hazardous waste subject to Land Disposal Restrictions is accepted and subsequently shipped to an off-site treatment, storage or disposal facility, the Facility will comply with the applicable notice and certification requirements specified by 40 CFR 268.7.

9.2. Wastes Shipped Off-Site that Meet LDR

Several Facility treatment systems will generate wastes which achieve applicable LDR standards and are subsequently shipped off-site for final disposal. These systems include the Aqueous Treatment System and the Solids Stabilization System which typically generate a listed hazardous waste, and the Aqueous Treatment System - Characteristic/K062, which generates a non-hazardous waste. For LDR purposes, the point of compliance for these treatment systems will be point at which a waste generated from a particular process meets LDR treatment standards. Any sorbents used for the purpose of free liquids management will be non-biodegradable as described at 40 CFR 264.314(e). The next step in the waste management process would then be off-site shipment of the wastes for disposal. For the purposes of this discussion, the Facility operates the following five specific processes that will be engaged in this activity:

Aqueous Treatment Systems - Press Building

1. Generation of residues from the Aqueous Treatment System - Characteristic/K062

   This process will generate a treatment residue that is not listed and is not characteristically hazardous. Provided that appropriate analytical criteria are achieved, these residues may be disposed of as non-hazardous directly from this process. If additional treatment or management is required, the residues will be placed in a containment building and managed appropriately.
2. Generation of residues from the Aqueous Treatment System - Listed

This process will generate a treatment residue that will normally be a listed hazardous waste based on the derived-from rule. The residues may or may not meet applicable LDR treatment standards. If they meet LDR treatment standards, the residues may be land disposed without further treatment (i.e., no stabilization required). If additional treatment or management is required, the residues will be placed in a containment building and managed appropriately.

Containment Buildings

1. Generation of residues from the containment buildings

This process consists of the management and potential treatment of either internal, Facility generated waste or external, customer-generated wastes. The wastes at any given time may be non-hazardous, characteristic, or listed. The wastes may or may not require additional treatment (e.g., stabilization) to meet applicable LDR treatment standards.

If the wastes meet applicable LDR treatment standards, they will be either loaded onto trucks from one of two dump floor areas and shipped off-site, or loaded onto trucks for off-site shipments. Absorbents may be used as necessary for free liquids management, but otherwise the wastes will not be chemically stabilized.

If the wastes do not meet LDR treatment standards, additional treatment or management is necessary. The wastes will be either:

a.) shipped off-site for additional treatment or management;

b.) stabilized by mixing reagents in one of two dump floors and loaded onto trucks for final disposal;

c.) placed onto a conveyor system from one of two dump floors, stabilized in one of two mixer systems, and subsequently loaded for off-site disposal; or

d.) a combination of b.) and c.).

2. Generation of residues from the containment building mixers

This process consists of collecting the same wastes described in 1 above and placing them into one of two mixing units fed by conveyor systems from the dump floors, chemical reagent silos, and waste storage silos. Wastes from these units will be either loaded onto trucks for off-site disposal, or returned to the dump floors for additional processing.

3. Debris management and treatment

As specified in Section 3, the Facility may manage and treat debris in the containment buildings by the following methods specified at 40 CFR 268.45, Table 1:
<table>
<thead>
<tr>
<th>Method</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Extraction</td>
<td>abrasive blasting, scarification, grinding and planning, high pressure steam and water</td>
</tr>
<tr>
<td>Chemical Extraction</td>
<td>water washing and spraying, liquid phase solvent extraction</td>
</tr>
<tr>
<td>Chemical Destruction</td>
<td>chemical oxidation, chemical reduction</td>
</tr>
<tr>
<td>Immobilization</td>
<td>microencapsulation, macroencapsulation, or sealing</td>
</tr>
</tbody>
</table>

Each of these debris management technologies includes specific performance standards necessary to meet the treatment requirements, the Facility will comply with these standards as they are presented in 40 CFR 268.45, Table 1. For operating record purposes, the Facility will develop a document to show compliance with debris standards that are not analytical in nature. For example, the Facility may document the debris treatment referred to as "physical extraction - high pressure water treatment" by creating a document either paper or electronic that would contain the following language: "Wastestream [insert reference to wastestream] was managed by the alternate debris treatment standard at 40 CFR 268.45, Table 1. by Physical Extraction - high pressure water. LDR certifications typically provide this data. The wastestream was composed of glass, metal, plastic, and rubber, and was cleaned to a clean debris surface standard as defined in the reference regulation." Such a document would then be signed (on paper or electronically) by an operator, supervisor, or appropriate personnel and maintained in the operating record for the generator at issue. Information for debris treatment standards that require a chemical efficiency will also be maintained in the operating record (e.g., demonstration that contaminants achieve at least a 5% by weight water solubility for Chemical Extraction - Water washing and spraying). Following treatment or management by the specified debris treatment technologies, the debris wastestream will be loaded onto a truck and shipped off-site for disposal.

For each of the five processes described above, the Facility will make one of three potential regulatory determinations as follows:

i. Characteristic waste rendered non-hazardous

ii. Listed waste treated to meet applicable LDR treatment standards

iii. Hazardous debris, contaminated soil, or other waste subject to a performance or alternate treatment standard

Item i has been addressed above and in previous sections. Regulatory determinations for Item ii above will be demonstrated for the processes described above by a combination of Dose/Response Testing and LDR Verification Testing. Documentation of compliance with Item iii will be documented as explained above. Procedures for these two forms of documentation are described below.
9.3. **Dose/Response Testing**

The Facility will perform dose/response testing on a monthly basis to supplement data obtained from the generator regarding LDR constituent levels and to confirm the stabilization reagent formulation. The stabilization reagent formulation will be adjusted as necessary based on the results of the most recent dose/response testing to use the formulation that most efficiently meets the applicable Land Disposal Restrictions treatment standards for metals. In addition to periodic dose response testing, an alkalinity of the solid waste matrix will be determined for each waste stream prior to conducting a stabilization event as a process control to ensure the appropriate amount of reagent is added. A sample will be collected for each bulk waste stream prior to commencing with a stabilization event. For non-bulk waste streams, an alkalinity sample may be collected as a grab sample, as a composite sample from a wastestream, or multiple wastestreams may be consolidated and mixed prior to collection of a sample for alkalinity of the solid waste matrix. Only processes that are using stabilization reagents for a particular waste management/processing scenario will participate in the Dose/Response Testing program.

Dose/response testing is designed to determine the stabilization reagent formulation for the period beginning with approval of a testing event’s results and ending with approval of the next testing event’s results. Dose/response testing is not designed to document compliance with applicable treatment standards. Compliance with applicable treatment standards for stabilized treatment residue will be documented in accordance with the procedures specified in Section 9.4.

The dose/response testing will be conducted in accordance with the following procedures:

1. Representative samples of wastes from the applicable processes described previously in Section 9 will be collected to prepare the formulation samples. Samples will be collected by trained hazardous waste technicians, supervisors, or professionals who are knowledgeable of the required procedures. If one or more of the processes are not in operation, samples will be obtained when the process is active.

2. Various mix ratios of waste and stabilization reagent(s), if applicable to the process, will be prepared and placed into appropriate sample containers. The initial formulation ratios will include several weight ratios of stabilization reagent across a range within which the appropriate stabilization reagent formulation for achieving compliance with applicable Land Disposal Restrictions treatment standards. Additional mixture ratios may be used to obtain a broader range of data.

3. Each mixture will be analyzed for the applicable Land Disposal Restrictions treatment standards for metals in accordance with the methods required for each parameter by 40 CFR Part 268.

4. Analytical results will be reviewed by the Facility and compared to the current applicable Land Disposal Restrictions treatment standards for metals. A stabilization reagent formulation that meets the applicable metals treatment standards will be selected and communicated to the solids stabilization system operator. Waste codes, and the applicable LDR constituents associated with the waste codes, may be "reset" (i.e., waste
codes not carried through to next batch) if the particular dump floor or treatment area has been cleaned of residues as described in Section 5.3 of the Containment Buildings Design and Operation Information.

5. If necessary, the system operator will adjust the stabilization formulation in use in the solids stabilization areas to match the formulation specified by the most recent dose/response results. The designated stabilization reagent formulation will be maintained as the minimum formulation until new dose/response data indicate an adjustment is necessary. Each process may have its own unique dose/response formula.

6. The results of the dose/response formulations and the formulation designated for use will be maintained in the Facility's operating record.

Operating data will be logged on a daily basis to document the quantity of stabilization reagent(s) added in the solids stabilization processes. Because The Facility combines various hazardous wastestreams with multiple waste codes for treatment purposes, unless the generator of a particular wastestream certifies that the wastestream meets the applicable treatment standard(s) specified in 40 CFR Part 268, all of the treatment standards applicable to the wastes treated will also apply to the stabilized treatment residue. Therefore, the monthly dose/response testing results will be compared to the metals treatment standards applicable to the waste codes associated with the individual hazardous wastestreams being treated in the system.

9.4. LDR Stabilization Verification Sampling and Analysis

The processes that generate wastes that meet LDR treatment standards are discussed in the proceeding section. The Facility will demonstrate compliance with the applicable Land Disposal Restriction treatment standards for wastes from each of these processes as described in this section. Wastes generated from these processes have the potential to be either listed wastes, characteristic wastes, or non-hazardous wastes. The listed hazardous wastes are hazardous according to the "derived from rule" (40 CFR 261.3(c)(2) as incorporated by reference at 329 IAC 3.1-12-1) because it is derived from the treatment of various listed hazardous wastes. Based on the "derived from rule" the listed wastes carry all of the hazardous waste codes for the listed wastes of which it is a mixture.

Because the Facility combines various listed hazardous wastestreams with multiple waste codes for treatment purposes, unless the generator of a particular hazardous wastestream certifies that the wastestream meets the applicable treatment standard(s) specified in 40 CFR Part 268, all of the treatment standards applicable to the wastes treated, including any lab pack wastes commingled in the treatment system, will also apply to the wastes generated after treatment. Therefore, the stabilization verification sampling and analysis results for treated wastes will be compared to the Land Disposal Restrictions treatment standards applicable to the waste codes associated with the individual hazardous wastestreams being treated in the stabilization processes. Waste codes, and the applicable LDR constituents associated with the waste codes, may be "reset" (i.e., waste codes not carried through to next batch) if the particular dump floor or treatment area has been cleaned as described in Section 5.3 of the Containment Buildings Design and Operation Information.
Hazardous wastes generated by the Facility during treatment or management of characteristic/K062 hazardous wastes will be decharacterized during stabilization, and thus rendered non-hazardous prior to shipment off-site.

The Facility will sample and analyze wastestreams generated from each stabilization/LDR treatment process (characteristic and/or listed) prior to disposal on a weight basis to verify compliance with the applicable Land Disposal Restrictions treatment standards. Each process performing treatment activities for the purposes of achieving compliance with LDR treatment standards will be sampled on a quarterly basis from the process for a minimum of four sampling events per calendar year. Compliance with applicable cyanide treatment standards is further discussed in Section 9.6.

Sampling and analysis of hazardous wastes from LDR treatment processes will be performed in accordance with the following procedures:

1. Samples will be obtained at quarterly intervals from stabilization process and listed filter cake shipped directly to the landfill from a container containing wastes that meet LDR treatment standards and are bound for disposal. Each sample will be collected prior to the container exiting the Facility. The container will be held at the Facility until the results of the sampling and analysis are approved in accordance with the procedures in this section of the waste analysis plan.

2. The material in the container to be sampled will be divided into four (4) equal portions. One (1) grab sample will be obtained from the approximate center of each of the four portions using an appropriate sampling device in accordance with SW-846 guidance.

3. The four grab samples will be composited to prepare a representative sample. The composited sample will be transferred to appropriate sample container(s) prior to analysis.

4. The samples will be analyzed for the applicable Land Disposal Restrictions treatment standards in accordance with the methods required for each parameter by 40 CFR Part 268. Wastes will not be managed that contain organic constituents above applicable LDR treatment standards; therefore Stabilization Verification Sampling and Analysis will not be conducted for organic constituents.

5. Analytical results will be reviewed by management and compared to the current applicable Land Disposal Restrictions treatment standards. Waste codes, and the applicable LDR constituents associated with the waste codes, may be "reset" (i.e., waste codes not carried through to next batch) if the particular dump floor or treatment area has been cleaned of residues by the procedures in Section 5.3 of the Design and Operation Information Containment Buildings Information in Attachment D – Containment Buildings of the permit. If the sample results meet all the applicable treatment standards, it will be released for shipment. If the sampled container fails to meet all the applicable treatment standards, it will be retreated and/or retested until sample results verify the applicable treatment standards are met.

6. The results of the sampling events will be maintained in the Facility's operating record.
9.5. Cyanide Treatment Standards

The Facility manages cyanide-bearing wastes by batch treatment either by oxidation or in the cyanide destruction system by a patented cyanide destruction reaction. Such wastes are treated to meet the applicable cyanide treatment standards under the Land Disposal Restrictions. Due to the complex nature of cyanides and the difficulty of conducting either oxidation or patented destruction in different waste matrices, it is necessary to treat cyanide prior to further treatment for other hazardous waste constituents or characteristics.

Compliance with cyanide treatment standards will be demonstrated in accordance with the procedures specified in this section.

1. Total cyanide will be evaluated prior to placement in the waste management system where required by the analyses specified in Section 7.4 of this waste analysis plan.

2. Laboratory analysis results or similar documentation (e.g., LDR Notice stating compliance with cyanide treatment standards) will be required for those hazardous wastes to be treated directly in the solids stabilization systems. This documentation will demonstrate that the waste streams meet the applicable cyanide treatment standards. Testing for cyanide is not required for hazardous wastestreams shipped under a valid land disposal restriction notice but may be performed at the discretion of the Facility.

3. Testing or certification for cyanide treatment standards will only be required for those wastestreams carrying hazardous waste codes whose Land Disposal Restrictions treatment standards specify cyanide as a regulated constituent.

4. Land disposal restriction notices, documentation and/or any cyanide analytical results will be maintained in the Facility's operating record.

5. Those hazardous wastestreams failing to meet the applicable cyanide treatment standards will be batch-treated to achieve the required cyanide treatment standards, shipped to another treatment, storage and disposal facility, or rejected.

9.6. LDR Compliance for Facility-Generated Wastes

The Facility will determine whether the generated hazardous waste is a restricted waste subject to the land disposal restrictions at 40 CFR Part 268. The Facility will characterize such hazardous wastes for land disposal restrictions compliance purposes, as shown in Figure 8-1, to ensure that all applicable waste codes, and land disposal treatment standards are associated with each wastestream. Such restricted wastes will be further characterized by their treatability group (i.e., wastewater or nonwastewater) and, if applicable, by their subcategory within a treatability group. The Facility will make this determination using either analysis of a waste sample or knowledge of the wastestreams and processes involved in the generation of the waste, in accordance with 40 CFR 268.7(a).

Wastes that do not meet the treatment standards specified by 40 CFR Part 268 will be prohibited from land disposal unless: 1) a national capacity variance has been granted; 2) an exemption pursuant to 40 CFR 268.6 has been granted; 3) a case-by-case extension has been granted pursuant to 40 CFR 268.5; or 4) a treatability variance has been granted pursuant to 40 CFR 268.44. Wastes that are
newly identified or newly listed as hazardous wastes for which USEPA has not promulgated treatment standards will not be subject to the land disposal restrictions.

For lab packs packed by the Facility for management at an off-site treatment, storage or disposal facility, the Facility will determine whether the hazardous wastes contained in the lab pack meet the applicable land disposal restriction treatment standards or document that the waste has been treated by the appropriate specified treatment technology. The Facility will use either sample analysis or knowledge to make this determination. The Facility will ensure that only wastes that are specifically allowed will be included in any lab packs for which the alternative lab pack treatment standard is used, as specified by 40 CFR 268.42(c).

For Facility generated hazardous wastes destined for land disposal, the Facility will meet the most stringent applicable land disposal restriction treatment standards. In addition, Heritage will prepare applicable notifications and certifications for hazardous wastes generated at the Facility in accordance with the requirements of 40 CFR 268.7 and 268.9(d).

The Facility will submit a notice and certification to the land disposal facility for wastes subject to LDR requirements as required by 40 CFR 268.7. Each notice will include the information required by 40 CFR 268.7(b)(4) and (b)(5), as applicable.

Alternatively, if restricted hazardous wastes or waste treatment residues will be further managed at an off-site Subtitle C (hazardous waste management) facility, the Facility will submit notifications and certifications in compliance with the notice and certification requirements under 40 CFR 268.7(a).

The Facility will comply with the notification and certification requirements for characteristic wastes (or listed wastes that are listed only because they exhibit a characteristic) that have been treated to remove the hazardous characteristic and are no longer considered hazardous, as specified by 40 CFR 268.9(d). Such notifications and certifications will be submitted, maintained in the operating record and updated as required by 40 CFR 268.9(d).

The Facility will also comply with the notification and certification requirements for hazardous debris that has been treated by an extraction or destruction technology listed in Table 1 of 268.45 or debris that the Director has determined does not contain hazardous waste, as specified by 40 CFR 268.7(d). Such notifications and certifications will be submitted, maintained in the operating record and updated as required by 40 CFR 268.7(d).

In the event that Heritage requests an extension to an effective date of a land disposal restriction, Heritage will submit an application in accordance with the applicable requirements of 40 CFR 268.5(a) and (b) at the time the petition is submitted. In the event that Heritage requests a site-specific variance from a treatment standard, Heritage will petition the Regional Administrator in accordance with the applicable requirements of 40 CFR 268.44 at the time the petition is submitted.
APPENDIX A

ACCEPTABLE ANALYTICAL METHODS
<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>METHOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inorganic Constituents:</td>
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<tr>
<td>Metals, Total (1)</td>
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<td>Chromium hexavalent (1)</td>
<td>SW-846 7196A; SW-846 3060A; SM 3500-Cr B(4); Hach kit(4)</td>
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<tr>
<td>Mercury, total (2)</td>
<td>SW-846 7470A; SW-846 7471A</td>
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<tr>
<td>Cyanide, total (1)</td>
<td>SW-846 9010B</td>
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<tr>
<td>Cyanide, amenable (1)</td>
<td>SW-846 9012B, Hach Kit(4)</td>
</tr>
<tr>
<td>Cyanide, free (3), (4)</td>
<td>SM 4500.E; Heritage (Perstorp)</td>
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<td>Bench scale cyanide destruction unit evaluation (3), (4)</td>
<td>Heritage</td>
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<tr>
<td>Alkalinity of Waste Matrix (2)</td>
<td>Heritage</td>
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<td>Organic Constituents:</td>
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<tr>
<td>Organic carbon, total (TOC) (1)</td>
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<td>Petroleum hydrocarbons, total (TPH) (1)</td>
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<tr>
<td>Phenols (1)</td>
<td>SW-846 9066; EPA 420.4(4); EPA 420.1(4); Hach kit(4)</td>
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<tr>
<td>Polychlorinated biphenyls (PCB) (2)</td>
<td>SW-846 8082</td>
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<tr>
<td>PCB Screen (3), (4)</td>
<td>Positive/Negative – Positive confirmed and quantified by Method 8082A, Heritage(4)</td>
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<tr>
<td>Semivolatile Organic Compounds (2)</td>
<td>SW-846 8270C</td>
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<tr>
<td>Volatile Organic Compounds (2)</td>
<td>SW-846 8260B</td>
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<tr>
<td>Herbicides and Pesticides (2)</td>
<td>SW-846 8081A/8081B/8151A</td>
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<tr>
<td>Carbamates (2)</td>
<td>SW-846 8318/8321A/EPA 630(4)</td>
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<tr>
<td>Alcohols (2)</td>
<td>SW-846 8015B/8015D</td>
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<td>Pesticides GC/NPD (2)</td>
<td>SW-846 8141A(4)</td>
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<tr>
<td>Pesticides GC ECD (2)</td>
<td>SW-846 8081A/8081B(4)</td>
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<td>Dioxins and Furans (2)</td>
<td>SW-846 8280A/8290</td>
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<td>Miscellaneous:</td>
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<td>Acidity (3), (4)</td>
<td>EPA 305.1; SM 2310B(4A), Heritage</td>
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<tr>
<td>Alkalinity (3), (4)</td>
<td>EPA 310.2; SM 2320B</td>
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<td>Appearance (physical description) (3), (4), (5)</td>
<td>Manual inspection</td>
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<td>Bottom sediment &amp; water (BS&amp;W) (3), (4)</td>
<td>ASTM D-96 (1988)</td>
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<td>BTU (3), (4)</td>
<td>ASTM D-240-02 (2002); ASTM D-4809 (2000)</td>
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<td>Chemical oxygen demand (COD) (1), (4)</td>
<td>EPA 410.4</td>
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<tr>
<td>Chlorine, percent (3)</td>
<td>ASTM D-240-02 or ASTM D-5839-96 (2006)</td>
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<td>Compatibility, Aqueous (3), (4)</td>
<td>Heritage</td>
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<tr>
<td>Compatibility, Alkaline (3), (4)</td>
<td>Heritage</td>
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<tr>
<td>Compatibility, Receiving Unit (3), (4)</td>
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<tr>
<td>Density (3), (4)</td>
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<td>Flammability Potential (3), (4)</td>
<td>ASTM D-4982-95 (2001)</td>
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<tr>
<td>Flash point (3)</td>
<td>SW-846 1010A; ASTM D-93-80; ASTM D-3278-96 (2002)e1</td>
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<td>Halogens, total (TX)</td>
<td>SW-846 9075</td>
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<td>Halogenated solvents (Used Oil) (3)</td>
<td>SW-846 8010 (Modified)</td>
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<td>Inorganic acid concentrations (3), (4)</td>
<td>Heritage</td>
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<tr>
<td>Nickel treat/nickel spike treat (3), (4)</td>
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<tr>
<td>Nitrate/nitrite strip test (3), (4)</td>
<td>Test paper</td>
</tr>
<tr>
<td>Paint filter liquids test(1)</td>
<td>SW-846 9095</td>
</tr>
<tr>
<td>PH (1)(6)</td>
<td>Test paper; SW-846 9040C; SW-846 9045C; SM 4500H+</td>
</tr>
<tr>
<td>Solids, percent (3), (4)</td>
<td>ASTM D-2042-2001= Insoluble in TCE Regular Total Solids =</td>
</tr>
</tbody>
</table>
# ACCEPTABLE ANALYTICAL METHODS

## HERITAGE ENVIRONMENTAL SERVICES, LLC

## WASTE ANALYSIS PLAN

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>METHOD</th>
</tr>
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<tbody>
<tr>
<td>Sulfur, percent (^{(3), (4)})</td>
<td>SM2540B</td>
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<tr>
<td>Toxinity Characteristic Leaching Procedure (^{(1)})</td>
<td>ASTM D4294 (2002); SW-846 9075</td>
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<tr>
<td>Visible free liquids (^{(5), (6)})</td>
<td>Manual inspection</td>
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<tr>
<td>Water, percent (^{(3)})</td>
<td>ASTM D-4377(2000) - Karl Fisher Method; ASTM 1744</td>
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### Notes:

1. Test methods typically performed by the Quality Assurance/Quality Control Laboratory and/or third party laboratory. Compliance assurance testing for hazardous waste performed by the Quality Assurance/Quality Control Laboratory, Heritage, and/or third party laboratory.
2. Test methods typically performed by Heritage or Third Party laboratories.
3. Test methods typically performed by Quality Assurance/Quality Control Laboratory.
4. Test methods are screening methods or wastewater methods, and not utilized for determining compliance with the land disposal restrictions. SW-846 Test Methods are utilized for determining compliance with the land disposal restrictions.
5. Testing and inspection may be performed by hazardous waste technicians, supervisors or professionals.

SW-846 test methods are specified in "Test Methods for Evaluating Solid Waste Physical/Chemical Methods", USEPA Publication SW-846, current edition, with updates. SW-846 Methods utilized will be the methods implemented by the laboratory conducting the testing procedures and may be updated from time to time depending on government revisions to laboratory methods. Appendix A is a compilation of common tests and methods that may be utilized for compliance purposes. Other analytes, not listed, may be analyzed for compliance purposes using SW-846 methods that are not provided in Appendix A. EPA test methods are specified in "Methods for Chemical Analysis of Water and Waste", USEPA Publication 600/4-79-020.

ASTM test methods are specified in "Annual Book of ASTM Standards."


Heritage methods are specified in the following standard operating procedures.

Equivalent approved methods may be used to analyze the parameters listed in this table.

The quality assurance quality/control plan in Appendix B of the Waste Analysis Plan is followed when conducting analysis at the Facility.
AQUEOUS COMPATIBILITY
HERITAGE TREATMENT CENTER

This test is designed to determine whether a wastestream reacts significantly upon contact with water. Wastestreams that exhibit a significant reaction upon contact with water will be managed accordingly.

Method:
1. Pour approximately 50-100 ml water into a sample container and add 20-50 ml sample of the wastestream.
2. Observe mixture for reactions (i.e., solidification, polymerization, excessive fume release, excessive heat release) and visually determine if the wastestream is soluble/insoluble, miscible/immiscible.

ALKALINE COMPATIBILITY
HERITAGE TREATMENT CENTER

This test is designed to determine whether a wastestream reacts significantly upon contact with an alkaline medium. Waste stabilization is typically conducted under alkaline conditions. Wastestreams that exhibit a significant reaction upon contact with caustic solution will be managed accordingly.

Method:
1. To a 20-50 gram sample of the Wastestream, add dry caustic reagent approximately 15% by weight with water and mix
2. Observe mixture for reactions (i.e., polymerization, excessive fume release, excessive heat release) and determine any compatibility precautions necessary for the waste to be managed in an alkaline media.
1.0 **Policy**
It is the policy of Heritage Environmental Services, LLC (Heritage) that written Standard Operating Procedures are to be followed as written unless superseded by event specific instruction. Event specific instruction is provided on a temporary Change in Procedure Form. Refer to SOP 50-09 for instructions on the Temporary Change in Procedure Form.

2.0 **Purpose**
To describe the proper procedures to safely, efficiently, and compliantly perform an Amperometric Cyanide Analysis by Perstorp.

3.0 **Preface**

3.1 **Personnel**
All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.

3.2 **Safety**
Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

4.0 **REAGENTS AND MATERIALS**

4.1 **Apparatus**
Alpkem CN 3000 Cyanide Analyzer with auto sampler or its equivalent.
Adjustable micro-pipettor.
Adjustable macro-pipettor.
Volumetric flasks of varying sizes.
Polyethylene sample tubes.

4.2 **Reagents**

4.2.1 DI Water Type II
4.2.3 Molar NaOH 100ml of 1.0 Molar NaOH per 1 Liter DI water.
4.2.4 Carrier and Acid Reagents: (0.12 molar HCL) Transfer 8 ml concentrated HCL into 1-liter volumetric flask. Carefully dilute to volume with DI water.
4.2.5 1000ppm stock cyanide standard solution.
4.2.6 Ligand Exchange Reagent A: Weigh 0.1 grams tetraethylendiamine (TEP) into a 160ml volumetric flask: dilute to volume with DI water. Store at room temperature.
4.2.7 Ligand Exchange Reagent B; (Dithizon solution) – Weigh 0.010 grams of dithizone into a 160ml volumetric flask containing 1 ml of 1.0 molar NaOH dilute to volume with DI water. Insure that all of the dithizone is dissolved before use. Store at room temperature.
4.2.8 Mercury II cyanide, >99% purity.
4.2.9 Potassium Nickel II Cyanide.
4.2.10 Lead Carbonate.
4.2.11 Sodium Arsenite.
4.2.12 Sodium Hydroxide Pellets.

5.0 JOB PROCEDURE:
5.1 Before powering up, Pump platens should be loosened.
Note: Pump platens should be loosened when power is off.
5.2 Turn power on to computer. (This should power everything up ie; computer, sampler and analyzer.)
Note: If everything does not come on, check troubleshooting chart.
5.3 Click ok at Notice Screen Log On prompt.
5.4 At Log On Screen prompt click on cancel. (This will load programs.)
5.5 Click on Win Flow.
5.6 Pump platens should be adjusted to proper flow. (Take care not to over tighten)
5.7 Click on Method Editor.
5.8 Click on file, then open.
5.9 Choose file avbl 1677 or oia 1677.
5.10 Close Method Editor
5.11 Click on Sample table.
5.12 Click on File then Open.
5.13 As an example choose 1087144 or Comp 2903 and click ok.
5.14 In the sample table screen enter new sample number for each sample in the name column.
5.15 Enter U for unknown under type.
5.16 Enter your dilution under dl.
Note: Make sure sample is in right cup on sample table.
5.17 Click File then Save As
5.18 Enter new sample number, click ok.
5.19 Click Collect Data.
5.20 Enter your Operator ID (this is your Analyst #)
5.21 Click Ok.
5.22 Sample Table will come up. This will be your new sample number click ok.
5.23 At this time you should be in the Results Table. This should match your new sample number, if it does click ok, if it does not see trouble shooting chart.)
5.24 At this time you should be in the Analysis Table click on Calibration then Load Calibration. Choose your last known calibration.
5.25 Click on Calibration. Then Use Loaded.
5.26 Click on Play button. (Right Arrow button) and this will start your baseline.
Note: You must have a stable baseline. Allow baseline to stabilize.
Note: Now would be a good time to prep samples see Sample Preparation Procedures.
5.27 If baseline raises or lowers off zero line you should click on Zero button. (0 with line through it.)
Note: A good baseline that is stable will only vary 500 units.
5.28 If baseline is flat or very erratic, click on Serial Communication Window Channel 2 should be at 50.00%.
Note: See trouble shooting chart if you cannot establish a good baseline.
5.29 Load sample tray.
Cup #1 will be 0.10 ppm standard Sync peak
Cup#2 will be 0.10 ppm standard I.C.V.
Cup #3 will be 0.04 ppm standard C.C.V.
Cup #4 and on will be your samples.
5.30 You are now ready to run your standards and your samples. Click on Fast Forward button (double right arrows with vertical line at end) this will start your run.
5.31 When run is completed check I.C.V. and C.C.V. with Quality control acceptance criteria.
Note: If not in parameters change calibration to within parameters. Do this from Load Calibration then click on Analysis, smoothing then click ok.

6.0 SAMPLE PREPARATION
Oxidizers and sulfides are common interferences in CN testing. They must be removed before any sample can be analyzed or the sample will result will be erroneously high or low. Any sample showing the presence of either interference must be diluted at least 1:5 with 0.04 N NaOH prior to testing and it is recommended that interference treatment be performed on a dilute sample as opposed to a raw sample to ensure interference removal.

6.1 Test all samples for the presence of oxidizers by placing a drop of sample on a strip of K1 paper that has been acidified with acetic acid. If the sample tests positive by turning the paper a dark purple, dilute samples other than CN wastestreams up to 1:500 with 0.04 NaOH and recheck for the presence of an oxidizer. If oxidizers are still present add NaAsO2 in 0.25 g per 50 ml sample increments
6.2 Even trace amounts of sulfide can cause a false positive result at the detector. Therefore it is necessary to treat every sample by adding PbCO3 and stirring to precipitate out any sulfide that may be present.
6.3 Filter the sample through P-2 filter paper. Do not run turbid samples through the instrument. Try a glass fiber filter if P-2 does not clear the sample up.
6.4 It is recommended that all samples be diluted at least 1:10 with 0.04N NaOH. If a metal Hydroxide precipitate forms, dilute with DI water. Samples with a strong alkalinity may require additional dilution to overcome the buffering effect of the sample.
Note: Avoid testing known CN bearing wastestreams on the CN available instrument. If it's necessary to run a CN wastestream dilutions of 1:10000 or greater may be required.
6.5 Do not run turbid samples, oily samples or samples containing surfactants through the instrument! Once all interferences have been removed filter 25 ml of sample through P2 or 410 filter paper. Add 1 drop of reagent A and 2 drops of reagent B to the 25 ml of filtrate. The sample is ready for analysis so refer to Job Procedures steps 5.27 through 5.31.

7.0 TROUBLE SHOOTING:
7.1 If the analyser and computer does not power up.
   7.1.1 Check power strip to ensure computer and analyser are plugged in and that the power strip is on.
   7.1.2 Make sure power is turned on to the computer and analyser.
   7.1.3 See supervisor if the above does not correct problem.

7.2 If Analyser stops in the middle of a run.
   7.2.1 Click on play button.
   7.2.2 If no operation buttons are highlighted, reboot. (This may cause you to lose your entire run.)
   7.2.3 See supervisor if the above does not correct problem.

7.3 If computer locks up.
   7.3.1 Reboot computer.

7.4 If baseline is noisy or unstable.
   7.4.1 Check for leaks, if you have a leak fix it.
   7.4.2 Check pump tubes if they are flat or have a hole in the tube replace tube. (If one of the tubes is bad replace them all, as they will be going bad shortly.) (White and green tube is waste and white and black tube is reagents.)
   7.4.3 Check tension on pump platens. NOTE: DO NOT OVER TIGHTEN, AS THIS WILL SHORTEN THE LIFE OF THE PUMP PLATENS.

7.4.4 Check for blockage:
   7.4.4.1 Unhook all lines one at a time and inject DI water through them. Remove blockage or replace lines as needed. Rehook lines.
   7.4.4.2 Check flow through valve module. Turn pump off, loosen platens and valve in Load Position, pull tubes off of Sample in and Waste lines. Inject DI water through Waste line. Water will go through loop and out Sample in line. With DI water flowing through replace tubes on Sample in and Waste line.
   7.4.4.3 Check flow through valve module turn valve to inject position and take to test and Carrier in tubes off. Inject DI water through To Test and will flow through Carrier In line. With flow running through valve module replace all tubes.
   7.4.4.4 Check flow through Gas Diffusion module (GDM) to check flow through (GDM) replace membrane with blue paper found between the membranes in the packets. Take all tubes off (GDM) and back flush (GDM) with DI
water. With flow running through (GDM) replace all tubes. (Replace blue paper with a new membrane.)
7.4.4.5 Check flow through flow cell. Unhook all electrical and line in (GDM).
With flow cell unhooked inject DI water through Waste Line. With good flow replace electrical lines and line in (GDM).
7.4.4.6 Bubble in flow cell. Stop flow from waste for about 10 seconds, then release flow and watch bubbles in waste line. Continue this procedure until no more bubbles are seen.
7.4.4.7 Bubble in Reference Electrode or dry. Rebuild Reference Electrode Chamber. See Attachment 1 for procedures for Rebuilding procedures.
7.4.4.8 Poor reagents. Make new reagents.
7.4.4.9 Gas in reagents. Vacuum reagents.

7.5 POOR SENSITIVITY:

7.5.1 Low temperature
7.5.2 Check for leaks if you see a leak repair it.
7.5.3 Check pump tubes for holes or if they are flat. If you find a bad pump tube replace them all. (The white and green one is the waste tube; the white and black ones are the reagent tubes.)
7.5.4 Blockage; Use same procedure for blockage under step D for noisy or unstable baseline.
7.5.5 Sample not filling loop. Check tension on pump platen or the Waste tube on the pump is bad. (White and Green tube).
7.5.6 Dirty working electrode; Polish electrode.
7.5.7 Reference Electrode Chamber Dry: Refill chamber.
7.5.8 Bad reagents: Make new reagents.
7.5.9 Gas in reagent: Vacuum Reagents.
7.5.10 Bad Standards: Make new Standards.
2. Flow Cell: Rebuild Procedure For New Style (OI) Flow Cell. Refer to Figure 2

a. Remove all the wires from the amperometric flow cell.

b. Turn off the pump.

c. Remove the flow cell from the system, being careful of any caustic fluid that may spill.

d. Remove the reference electrode assembly (two parts). Remove the gasket and the membrane at the bottom of the flow cell housing. Sometimes the membrane does not come right out; it can be removed once the flow cell is apart by gently and carefully pushing through the opening with the needle tip.

e. Remove the six setscrews that hold the flow cell assembly together. Gently pull the assembly apart, carefully laying the screws and the metal plates over to the side.

f. Thoroughly rinse both assemblies off and completely dry off the reference electrode housing assembly, especially inside the well where the electrode chamber is placed. DO NOT POLISH THE REFERENCE ELECTRODE. It has an electropolished coating on it. If necessary, wipe gently with soft cloth or paper towel. Normally just rinsing it is sufficient.

g. Polish the round silver working electrode surface with a wet cotton swab using a small amount of fine metal polishing compound (Toothpaste can be used if necessary, but polishing compound is best). Make sure there is plenty of water and that the polishing motion is in a gentle smooth circular motion. Rinse off the surface very well and dry working electrode assembly thoroughly. The surface should be very shiny when dried off. Put the two assemblies together, insert the screws and plates and tighten down set screws to a firm hand tight tension, being careful not to strip the setscrews.

h. Disassemble the reference electrode components and rinse the lower chamber with DI water, shake all fluid out, dry off completely, and carefully place to the side. Carefully rinse the silver electrode assembly off, carefully dry, and carefully place to the side.

i. Place a membrane in the bottom of electrode housing well. Fill the syringe with electrode filling solution eliminating any air at the tip. Put a small amount of filling solution on top of the membrane. At this time look under magnification to see if there are any (even tiny) air bubble in the solution. Next place the o-ring on top of the membrane. Put enough of the filling solution in to cover the o-ring. If the o-ring floats up, push it back down with the tip of the syringe, until it’s under the level of the fluid. Check again for air bubble under magnification. When you are certain there are no bubbles, screw in the reservoir fitting down hand tight.
While the flow cell is flat carefully place the tip of the syringe inside at the bottom of the lower housing. Fill the chamber so that it slightly overflows, forcefully enough to expel any air that may be trapped inside. Look inside to ensure no obvious air bubbles exist. Place the silver electrode into the chamber and just tighten enough to seal chamber, do not over tighten. Clean any spilled electrode filling solution that remains on flow cell.

Note: The above step, is the most critical, for correct performance of the cell & should not be rushed.

j. Place the flowcell onto the system and turn on the pumps.

k. Replace the wires only after all air that may have been in the system has been pumped out and only a solid stream of solution is passing through the flowcell.

l. Once the stream is flowing and the wires are in place go through the data collection steps and monitor the baseline. Sometimes it may take a few minutes for the membrane in the reference electrode to equilibrate. Also, it is suggested to inject 5 or 10 injections of a high standard (5 or 10 ppm) to equilibrate the surface of the working and reference electrode. Once the peaks display a consistent reproducibility data analysis can be performed.

Figure 2
Amperometric Flowcell Assembly (01)
(Part # 317941)
## STANDARD OPERATING PROCEDURE

### SOP Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Changes Summary</th>
</tr>
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<tbody>
<tr>
<td>Revision 0</td>
<td>6/25/10</td>
<td>Revision History is Unknown</td>
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<tr>
<td>Revision 1</td>
<td>6/25/10</td>
<td>Reformatted SOP</td>
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<tr>
<td>Revision 2</td>
<td>7/9/12</td>
<td>Removed some notes in 5.0. Modified 6.0.</td>
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<td>Revision 3</td>
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</table>
1.0 Policy
It is the policy of Heritage Environmental Services, LLC. (Heritage) that written Standard Operating Procedures are to be followed as written unless superseded by event specific instruction. Event specific instruction is provided on a temporary Change in Procedure Form. Refer to SOP 50-09 for instructions on the Temporary Change in Procedure Form.

2.0 Purpose
To describe the proper procedures to safely, efficiently, and compliantly perform the Liquid Density or Pounds per Gallon, plus the Density by Hydrometer API.

3.0 Preface

3.1 Personnel
All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.

3.2 Safety
Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

4.0 JOB PROCEDURE:
Billing for waste disposal services by Heritage is often based upon the volume in gallons of material received. This volume is calculated by dividing the net weight of the truck and trailer by the pounds per gallon density determined by the QA/QC lab.

4.1 Density or Pounds per Gallon:

4.1.1 Apparatus:
4.1.1.1 Graduated cylinder (50 mL)
4.1.1.2 Analytical balance
4.1.1.3 Calculator
4.1.2 Gravimetric Method:

4.1.2.1 Place the empty graduated cylinder on the scale and tare the cylinder.

4.1.2.2 Pour a known amount into the cylinder, make sure to clean the outside of the cylinder.

4.1.2.3 Record the weight in grams and the volume in mL.

4.1.2.4 Use the following calculation:

\[
\text{mass of liquid in grams} \times 8.345 = \text{density} \\
\text{volume in mL}
\]

**Note:** If the specific gravity is requested:

\[
\text{mass of liquid in grams} = \text{specific gravity} \\
\text{volume in mL}
\]

4.2 Density by Hydrometer: API (American Petroleum Institute)

4.2.1 Apparatus:

4.2.1.1 Hydrometer

4.2.1.2 Graduated Cylinder (100 mL)

4.2.1.3 Tabulated API values with corresponding densities (ASTM handook)

4.2.2 Method:

4.2.2.1 Pour the oil sample into the graduated cylinder watching for a separate water phase or settled solids. If any separate phases or solids are detected abort the test and run the above method.

4.2.2.2 Place a Hydrometer tube in the cylinder. Be sure there is enough liquid in the cylinder to support the tube without letting it touch the bottom. If the Hydrometer sinks below the surface of the liquid or does not sink enough for the scale on the hydrometer to be read, choose an alternate hydrometer.

4.2.2.3 Read the API number to the nearest scale. (i.e. 31.3 = 31, 31.5 = 32) Remove the hydrometer from the cylinder, wipe it clean, and read the temperature on the thermometer.
4.2.2.4 With the hydrometer scale value and the temperature, go to the API reference chart to obtain the appropriate API value. Find the scale value first and go down the scale until you find the temperature. Remember that three digit number and proceed to the API-to-pounds chart.

4.2.2.5 API-to-pounds reference chart. This chart converts the API number into the correct Density in pounds per gallon.

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Apparatus: Hydrometer
METALS TREATABILITY

Nickel Treatability/Metals Treatability

1. Measure out approximately 45 ml of sample. Solids will require a 1:10 slurry and strong acids will require dilution (up to 1:10). Acids requiring dilution should be spiked prior to the dilution and the result should be multiplied by the dilution factor.

2. Adjust the pH to between 9.5 and 10.5 with hydrated lime obtained from Tank 30B (the closer to 10.0, the better). NOTE: Alkaline samples may require acidification to attain the proper pH.

3. Add sulfide (NaSH) until a slight excess is indicated by lead acetate paper. Mix thoroughly.

4. Filter the sample. Double check that there is a sulfide residual in the filtrate at this point.

5. Analyze by flame AA accounting for all dilutions (including 10% slurries).

Nickel Spike Treatability

1. If the sample is an oil with greater than 49% water, drop the pH to 2.0 or below with concentrated sulfuric or hydrochloric acid. Measure 45 ml of sample and add 5 ml of 1000 ppm nickel solution to that sample mix.

2. Follow steps 2 through 5 above.
Submitted as Confidential Business Information
Per 40 CFR 270.12
RECEIVING UNIT COMPATIBILITY TEST

These procedures are implemented to determine compatibility prior to transfer of hazardous wastes into treatment/storage units at the Facility. These compatibility test procedures are appropriate for direct unloading of a bulk shipment to a receiving unit, or transfer of containerized materials to a receiving unit, as specified in Section 8.4.

1. Floor Department - Prior to transferring a wastestream directly to a treatment/storage unit, submit a request for a compatibility test with the receiving unit to the laboratory.

2. Laboratory - Fill a small sample bottle with the sample to be tested. Label the side with the document, wastestream and product numbers, as well as date/time. Label the cap with the receiving unit number and date.

3. Determine the approximate ratio of samples to be combined.

4.a. Bulk Transfer - In a sample container, carefully combine the sample with the last three samples which were unloaded into the receiving unit.

4.b. Container Transfer - Prior to adding a new wastestream to a receiving unit, in a sample container, carefully combine the sample with a sample of the contents of the receiving unit.

5. Stir the sample to ensure that it is well mixed. Watch for violent reactions, gas evolution, and significant temperature changes. Temperature changes may be measured by touch or thermometer, depending on the extent of the reaction, if any.

6. If no significant reactions, gas evolution, or temperature changes are observed within a five (5) minute period, the sample passes the compatibility test and the waste may be transferred to the designated receiving unit.

7. If significant reactions, gas evolution, or temperature changes are observed during the five (5) minute test period, notify the supervisor on duty. The waste may not be transferred to the receiving unit until appropriate management procedures are determined.

8. Repeat this compatibility test as necessary to determine appropriate management of the waste.
CONSOLIDATION COMPATIBILITY DETERMINATION

The following compatibility determination procedures are appropriate for consolidation of dissimilar wastes prior to shipment to a third party treatment, storage or disposal facility, or management in the Facility stabilization systems. Such activities typically include consolidation of solids and debris into rolloff containers or containment buildings areas, bulking of lab pack wastes, or repackaging of lab packs without removal of the wastes from their original containers. These compatibility determination procedures are not required for lab pack wastes that are repackaged into new lab packs without opening the original containers; wastes generated from the same or similar processes; or media not amenable to sampling, such as batteries, light bulbs, equipment, debris, etc. Hazardous wastes that are bulked for management on-site are tested in accordance with the applicable requirements for the waste management system in which the waste will be managed (Section 7.4).

1. Prior to consolidating dissimilar wastes, determine waste compatibility based on the following information, as available: completed wastestream surveys, material safety data sheets or equivalent technical information, available analytical data, published technical references, and knowledge of the wastestream.

2. If the waste is a virgin, off-specification, outdated, obsolete, unsalable, or unusable commercial product, compatibility may be determined based on knowledge of the chemical characteristics and/or information reviewed in Step 1 alone. Other wastes must be compared using the Heritage Compatibility Chart.

3. If the waste is intended for management in the Facility stabilization system, a consolidation compatibility assessment will be performed for each segregated waste management area.

4. If there is not an "X" noted in the Heritage Compatibility Chart for the waste combination in question, the wastes may be consolidated. An "X" in the Heritage Compatibility Chart denotes a waste combination that is likely to be incompatible. Waste combinations marked by an "X" in the Heritage Compatibility Chart shall not be consolidated, unless they have passed the Receiving Unit Compatibility Test.

**HERITAGE COMPATIBILITY CHART**

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<th>Acids</th>
<th>Bases/\nCaustics/\nAlkalis</th>
<th>Chlorinated Solvents</th>
<th>DOT Class 929/\nAqueous</th>
<th>Cyanides</th>
<th>Flammables/\nCombustibles 30</th>
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Use of Table: Waste categories use DOT-defined terms. A combination with an "X" denotes an incompatibility. Do not consolidate waste-combinations noted by an "X".

---

29 See Definition of DOT Class 9 at 49 CFR 173.140
30 Non-chlorinated solvents and oils
1.0 Policy
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2.0 Purpose
To describe the proper procedures to safely, efficiently, and compliantly perform the acidity test.

3.0 Preface

3.1 Personnel
All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.

3.2 Safety
Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

4.0 JOB PROCEDURE:


4.2 Apparatus: pH meter, burette, 250 ml beaker, dropper, stir plate, stir bar.

4.3 Reagents: 1.0 Normal NaOH, 0.02 Normal H₂SO₄, 30% H₂O₂.

4.4 Place 25.0 mls of sample into beaker.

4.5 If pH is greater than 4, add 5.0 ml increments of 0.02 N H₂SO₄ until the pH is less than 4.

4.6 If there are metals in solution, add 5 drops of 30% hydrogen peroxide to the sample and boil for 3 to 5 minutes. Cool to room temperature.
4.7 While stirring, titrate to a pH of 10.0 using 1.0 N NaOH and record the mls required.

4.8 Acidity (mg/L) = [(mls NaOH) (1.0 N NaOH) - (mls H₂SO₄) (0.02 N H₂SO₄)] (50.000) / (25 mls sample)

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2.0 Purpose
To describe the proper procedures to safely, efficiently, and compliantly perform the Cyanide by Hach test.

3.0 Preface

3.1 Personnel
All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.

3.2 Safety
Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

4.0 Job Procedure:

4.1 Apparatus, Materials and Reagents
CyanIVer 3 powder pillow
CyanIVer 4 powder pillow
CyanIVer 5 powder pillow
Spectrophotometer
Test tubes

4.2 Filter 25 ml/s of sample into a beaker. Adjust the pH of highly alkaline samples to 7.0 with 2.5N Hydrochloric acid solution. Account for any significant dilution in the pH adjustment. The presence of oxidizing or reducing agents should be treated according to the methods used in distillation pretreatment, if the interferant is significantly high in concentration.

4.3 Add the contents of one CyanIVer 3 powder pillow and shake for 30 seconds. Allow the sample to stand for 30 seconds.

4.4 Add the contents of one CyanIVer4 powder pillow and shake for 10 seconds.
4.5 Immediately add the content of one CyanIVer 5 powder pillow and shake for 15 seconds. Allow the sample to develop for 30 minutes. If cyanide is present, a pink color will turn blue after a few minutes.

Note: Delaying the addition of CyanIVer 5 packet for more than 30 seconds after the addition of CyanI Ver 4 packet will lead to erroneously low result.

4.6 Before reading the sample, set the wavelength to 612 nanometers and the appropriate factor on the spectrophotometer. Fill a spec tube with a portion of uncolorized sample to set spectrophotometer to zero percent transmittance or DI water depending on the sample. Read the concentration of the sample, making sure the transmittance is between 20 - 80 percent.

4.7 To determine concentration, multiply actual reading by ten to account for 10% slurry and by any other dilutions. Samples with more than > 1 ppm cyanide should be distilled to determine total cyanide concentration.

4.8 Record the actual concentration.

Note: A calibration curve has been previously generated according to appendices A and B.

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Standard Preparation

1. Prepare the following standard concentrations by diluting the 1000ppm ASTM CN standard, kept in the refrigerator, with D.I. H2O: 1.0ppm, 0.5ppm, 0.25ppm and 0.1ppm.

2. Measure 25mls of each standard into a cup and add the contents of one CyanaVer 3 reagent powder pillow to each, mix well for 30 seconds and then allow to sit undisturbed for an additional 30 seconds.

3. Add the contents of one CyanaVer 4 powder reagent pillow to each and mix well for 10 seconds, then proceed immediately to step 4.

4. Add the contents of one CyanaVer 5 powder reagent pillow to each and mix until completely dissolved.

5. Allow 30 minutes for the color to develop and then proceed to step one of, Guidelines for Factor Generation, Using the Spec-20 Spectrophotometer.
Guidelines for Factor Generation, Using the Spec-20 Spectrophotometer

The procedure for creating a factor is the same for each of the following constituents: Phenol by Hach, Phenol by distillation, CrVI by Hach, and Cyanide by Hach. The only difference being that different standard preparations and concentration ranges are used for each constituent.

1. Set the spectrophotometer to the appropriate wavelength.
2. Set the mode to transmittance using the mode key.
3. Zero the spectrophotometer with the sample holder empty using the left hand knob at the front of the spectrophotometer.
4. Place a cuvet containing the appropriate blank in the sample holder and set the transmittance to 100%, using the left-hand knob at the front of the spectrophotometer.
5. Place a cuvet containing the first standard in the sample holder and set the spec to the concentration mode. Using the increase-decrease key, enter the concentration of the standard.
6. Set the mode to factor and record the number that has been generated.
7. Repeat steps 4, 5, and 6 for each of the remaining standard concentrations for that constituent.
8. Calculate the average of the factors generated by each of the standards and record it for future reference.
# Standard Operating Procedure

## Hexavalent Chromium
1,5-Diphenylcarbodihydrazine Method using ChromaVer 3 Chromium Reagent

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1.0 **Policy**

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2.0 **Purpose**

To describe the proper procedures to safely, efficiently, and compliantly perform the Hexavalent Chromium test by Hach.

3.0 **Preface**

3.1 **Personnel**

All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.

3.2 **Safety**

Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

4.0 **Job Procedure**


4.2 **Apparatus**

4.2.1 Spectrophotometer (set at 540 nm)

4.2.2 Beaker

4.2.3 25 ml graduated cylinder

4.2.4 Test tubes

4.3 **Reagents**

4.3.1 1+1 Sulfuric Acid

4.3.2 Hach ChromaVer 3 pillow

4.4 Allow spectrophotometer to warm up for 15 minutes.

4.5 Solid samples perform 10% slurry. (Refer to 10% slurry SOP.) Liquid samples, filter and determine dilutions.

4.6 Zero the spectrophotometer with the actual sample. If a dilution is necessary, zero the spectrophotometer with the diluted sample or use DI water depending on the sample.
4.7 Adjust the pH to 1.0 with 1+1 sulfuric acid. Account for any major dilutions associated with the pH adjustment. Measure 25 ml of sample into beaker.

*Note: Not all samples need to be lowered to a pH of 1.0. The packet has an acid buffer added to it and it will lower most samples to the appropriate pH level. Check pH after addition.

4.8 Dissolve a ChromaVer 3 pillow in the sample and watch for any color change. If the solution quickly changes to a dark purple, a dilution is necessary. If the solution turns purple around the solid reagent and then loses that color when the sample is stirred the concentration of CrVI is probably greater than the 0.5 mg/L range of the reagent. In this case, the test must be run again at a larger dilution.

4.9 Allow the colorization reaction to proceed for at least 5 minutes and not more than 20 minutes. It is recommended that everyone read at 15 minutes in order to promote reproducibility.

4.10 Set the spectrophotometer wave length to slope 540 and the factor to the average value most recently determined during monthly calibration testing. See appendix A & B for slope factor generation.

4.11 Obtain the percent transmittance of the sample. Percent transmittance must be between 20 and 80 %, if a dilution was performed. Read the concentration with the appropriate slope factor entered in the spectrophotometer and multiply by any dilutions. Solid samples must include the initial 1:10 dilution of the 10% slurry. Standards should be checked on a monthly basis and factors regenerated if necessary.

4.12 Iron interferes at concentrations greater than 1ppm by producing a yellow color. Mercucous and mercuric ions also interfere slightly. If interferences are suspected, run a total chromium by flame AA.

4.13 Record the actual result in ppm.

Note: A calibration curve has been previously generated according to Appendices A & B.
APPENDIX A

STANDARD PREPARATION

1. Prepare an intermediate 100ppm Cr(VI) std. by diluting the 1000ppm Stock Chromium standard. (for Flame AA)

2. Prepare a 1ppm standard Cr(VI) solution by diluting the stock solution 1:100 with D.I. H₂O.

3. Prepare the following Cr(VI) Standard solutions by diluting the 1ppm standard solution with D.I. H₂O: 0.1ppm, 0.2ppm, 0.4ppm and 0.5ppm.

4. Add the contents of one ChromaVer 3 Reagent powder pillow to 25 mls of each standard and allow color to develop for 5 min.

5. Fill a cuvet with D.L. H₂O to be used as a blank.

6. Proceed to step one of Guidelines for Factor Generation using the Spec20 Spectrophotometer.
STANDARD OPERATING PROCEDURE

APPENDIX B

Guidelines for Factor Generation, Using the Spec-20 Spectrophotometer

The procedure for creating a factor is the same for each of the following constituents: Phenol by Hach, Phenol by distillation, CrVI by Hach, and Cyanide by Hach. The only difference being that different standard preparations and concentration ranges are used for each constituent.

1. Set the spectrophotometer to the appropriate wavelength.

2. Set the mode to transmittance using the mode key.

3. Zero the spectrophotometer with the sample holder empty using the left hand knob at the front of the spectrophotometer.

4. Place a cuvet containing the appropriate blank in the sample holder and set the transmittance to 100%, using the right hand knob at the front of the spectrophotometer.

5. Place a cuvet containing the first standard in the sample holder and set the spec to the concentration mode. Using the increase-decrease key, enter the concentration of the standard.

6. Set the mode to factor and record the number that has been generated.

7. Repeat steps 4, 5, and 6 for each of the remaining standard concentrations for that constituent.

8. Calculate the average of the factors generated by each of the standards and record it for future reference.

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2.0 Purpose
To describe the proper procedures to safely, efficiently, and compliantly analyze for phenol using the Hach method.

3.0 Preface
3.1 Personnel
All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.
3.2 Safety
Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

4.0 Job Procedure:

4.1 Apparatus:
4.1.1 500 ml separatory funnel (Plastic or Glass)
4.1.2 300 mls D.I. water
4.1.3 Hardness Buffer Solution 5 mls.
4.1.4 Phenol Reagent Pillow packet
4.1.5 Phenol 2 Reagent Pillow packet
4.1.6 Small glass funnel
4.1.7 P-8 small filter paper
4.1.8 Spectrophotometer and glass test tubes
4.1.9 30 mls of Chloroform
4.1.10 Sulfide Inhibitor Pillow Packet
4.1.11 Ring and a ring stand
4.1.12 Sodium Sulfate Anhydrous

4.2 Phenol by Hach Procedure:
4.2.1 If Sulfide is present in the sample, add a Sulfide Inhibitor Pillow, to 50 mls of sample. Filter through P-8 filter paper and add 1ml of filtrate to a separatory funnel.
4.2.2 Add 300 ml of D.I. water into the separatory funnel containing the filtered sample.
4.2.3 Add 5 ml of the Hardness Buffer to the funnel. Shake. The pH of the solution should be around 10.
4.2.4 Add the Phenol pillow packet (large beige colored packet), cap and shake vigorously.
4.2.5 Add the Phenol 2 pillow packet (small red colored packet), 1 cap and shake vigorously.
4.2.6 Add 30 ml of chloroform, and invert, shake and vent several times.
4.2.7 Allow the layers to separate in the funnel.
4.2.8 Extract some of the chloroform by using the small funnel and P-5 filter paper with anhydrous sodium sulfate into a test tube. Make sure it is a clean test tube and that there are no air bubbles or water clinging to the side of the tube.
4.2.9 Set the wavelength on the spectrophotometer to 460 and select the transmittance mode.
4.2.10 Zero the spectrophotometer with the sample holder empty using the left hand knob at the front of the instrument.
4.2.11 Prepare a blank by following steps two through eight.
4.2.12 Place a cuvet containing the blank in the sample holder and set the transmittance to 100%, using the right hand knob at the front of the instrument.
4.2.13 Remove the blank and replace it with the sample.
4.2.14 Switch to the concentration mode and record the concentration in mg/l.

Note: A calibration curve has previously been generated according to appendices A and B.
Standard Preparation

1. Prepare a 5ppm, 10ppm, 15ppm and 20ppm std. By diluting the 1000ppm ASTM Phenol Standard (kept in the refrigerator) with D.I. H2O.

2. Dilute 1ml of each std. to 300mls D.I. H2O and place in a 500ml separatory funnel.

3. Add 5mls of the Hach Hardness 1 buffer to the funnel, shake to mix.

4. Add the contents of one Phenol reagent powder pillow to the funnel, shake to dissolve.

5. Add the contents of one Phenol 2 reagent powder pillow to the funnel, shake to dissolve.

6. Add 30mls chloroform to the funnel, shake, vent, shake again, vent, then shake vigorously for a total of 30 seconds.

7. Extract the Chloroform through filter paper containing 5g Na2SO4 into a clean, dry cuvet.

8. Prepare a blank in the same manner as above, using 300mls D.I. H2O only.

APPENDIX B

Guidelines for Factor Generation, Using the Spec-20 Spectrophotometer

The procedure for creating a factor is the same for each of the following constituents: Phenol by Hach, Phenol by distillation, CrVI by Hach, and Cyanide by Hach. The only difference being that different standard preparations and concentration ranges are used for each constituent.

1. Set the spectrophotometer to the appropriate wavelength.
2. Set the mode to transmittance using the mode key.
3. Zero the spectrophotometer with the sample holder empty using the left hand knob at the front of the spectrophotometer.
4. Place a cuvet containing the appropriate blank in the sample holder and set the transmittance to 100%, using the right hand knob at the front of the spectrophotometer.
5. Place a cuvet containing the first standard in the sample holder and set the spec to the concentration mode. Using the increase-decrease key, enter the concentration of the standard.
6. Set the mode to factor and record the number that has been generated.
7. Repeat steps 4, 5, and 6 for each of the remaining standard concentrations for that constituent.
8. Calculate the average of the factors generated by each of the standards and record it for future reference.

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# Halogenated Solvent Scan Procedure

**Revision 2**  
**8/14/12**  
**SOP # 18-32**  
**PAGE 1 OF 4**

Submitted by: Kevin Smith

## 1.0 Policy
It is the policy of Heritage Environmental Services, LLC. (Heritage) that written Standard Operating Procedures are to be followed as written unless superseded by event specific instruction. Event specific instruction is provided on a temporary Change in Procedure Form. Refer to SOP 50-09 for instructions on the Temporary Change in Procedure Form.

## 2.0 Purpose
To describe the proper procedures to safely, efficiently, and compliantly perform the Halogenated Solvent Scan.

## 3.0 Preface

3.1 **Personnel**  
All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.

3.2 **Safety**  
Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

## 4.0 Job Procedure:

4.1 **Apparatus:**
- 4.1.1 Gas Chromatograph (G.C.)
- 4.1.2 Hexane
- 4.1.3 Glass pipettes
- 4.1.4 Solvent Standard (100 ppm)
- 4.1.5 G.C. vials
- 4.1.6 Eppendorf Pipett (10-100microliters)

4.2 **Procedure:**
- 4.2.1 Place 0.4 grams of sample into a 40 ml vial.
- 4.2.2 Add hexane to the neck of the vial. (40 mls)
- 4.2.3 Shake vigorously.
- 4.2.4 Allow time for any water or solids to settle to the bottom of the vial.
- 4.2.5 Transfer enough of the sample, using a glass transfer pipette to fill a target vial.
- 4.2.6 Cap the target vial and log in the solvent scan sample log.
- 4.2.7 Mark the vial with the sample # corresponding to the log entry.
4.2.8 Place the target vial in the first slot of the G.C. sample tray or in the first empty slot when adding a sample to a current run.

4.2.9 To start the Run, press:
   - Shift "SEQ"
   - START

4.2.10 After the run is complete, compare sample peak retention times to the F001, F002 solvent retention times in APPENDIX A.
   Note: These retention times are to be used as a guide. They need not match precisely.

4.2.11 Run the appropriate standard from APPENDIX B. Again compare sample peak retention times to the standard peak retention times.
   Note: These will be more precise but still possibly not perfect matches.

4.2.12 Calculate the concentration of the individual solvents according to the following calculation:

   \[
   \text{area of the solvent} / \text{area of the standard} \times 100 \times \text{any further dilution} = \text{conc. Ppm}
   \]

4.2.13 Record actual results in the log book and either <100 or > 100 in the computer. Record the name of the analyte in the comment field.
### Standard Operating Procedure

**Appendix A**

<table>
<thead>
<tr>
<th>Retention Time</th>
<th>Analyte</th>
<th>Area (100 ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.539</td>
<td>1,1,2-trichlorotrifluoroethane</td>
<td>431,161</td>
</tr>
<tr>
<td>1.600</td>
<td>Methylene Chloride</td>
<td>8,490</td>
</tr>
<tr>
<td>2.754</td>
<td>1,1,1-trichloroethane</td>
<td>636,208</td>
</tr>
<tr>
<td>2.825</td>
<td>Carbon Tetrachloride</td>
<td>2,576,446</td>
</tr>
<tr>
<td>3.181</td>
<td>Trichloroethene</td>
<td>335,230</td>
</tr>
<tr>
<td>5.663</td>
<td>Tetrachloroethene</td>
<td>1,441,050</td>
</tr>
<tr>
<td>5.672</td>
<td>Chlorobenzene</td>
<td>5,014</td>
</tr>
<tr>
<td>4.571</td>
<td>1,1,2-trichloroethane</td>
<td>85,126</td>
</tr>
<tr>
<td>10.275</td>
<td>4-bromofluorobenzene (surrogate)</td>
<td>31,366</td>
</tr>
<tr>
<td>13.145</td>
<td>1,2-dichlorobenzene</td>
<td>37,143</td>
</tr>
</tbody>
</table>
APPENDIX B

F001, F002 Standard Contents and Preparation

Std. 2940 contains the following:
- 1,1,2-trichlorotrifluoroethane
- Trichloroethene
- Tetrachloroethene
- 4-bromofluorobenzene (surrogate)

Std. 2941 contains the following:
- Methylene Chloride
- Carbon Tetrachloride
- 1,1,2-trichloroethane
- 1,2-dichlorobenzene

Std. 2942 contains the following:
- 1,1,1-trichloroethane
- Chlorobenzene

These are custom stock Standards, purchased from Ultra Scientific. Each vial contains 2mls of a 100ppm solution in Hexane.

The working standard is a 1ppm standard in Hexane. Dilute the contents of one 2ml vial in 200mls hexane.

### SOP Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Changes Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revision 0</td>
<td>6/28/10</td>
<td>Revision History is Unknown</td>
</tr>
<tr>
<td>Revision 1</td>
<td>6/28/10</td>
<td>Reformatted SOP</td>
</tr>
<tr>
<td>Revision 2</td>
<td>6/14/12</td>
<td>Made changes to 4.2.8.</td>
</tr>
<tr>
<td>Revision 3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1.0 **Policy**

It is the policy of Heritage Environmental Services, LLC. (Heritage) that written Standard Operating Procedures are to be followed as written unless superseded by event specific instruction. Event specific instruction is provided on a temporary Change in Procedure Form. Refer to SOP 50-09 for instructions on the Temporary Change in Procedure Form.

2.0 **Purpose**

To describe the proper procedures to safely, efficiently, and compliantly prepare a PCB extraction and run on the gas chromatograph.

3.0 **Preface**

3.1 **Personnel**

All personnel working with wastes at Heritage must be trained by the Standard Operating Procedures set by the supervisory personnel, approved by management, and the Corporate Safety Office.

3.2 **Safety**

Wear required safety apparel as outlined in the most recent Personal Protective Equipment Guidelines.

4.0 **Job Procedure:**

4.1 **Apparatus, Materials and Reagents**

4.1.1 40 ml vial

4.1.2 2 dram vial

4.1.3 2 ml 12X32mm vial

4.1.4 Hexane surrogate solution

4.1.5 Concentrated sulfuric acid

4.1.6 5% potassium permanganate solution

4.1.7 Solid phase extraction filters

4.1.8 Disposable glass pipettes

4.1.9 Scale

4.1.10 HP5890 Gas Chromatograph

4.2 Weigh out 1.0 gram of sample in a 40 ml vial.

4.3 (CAUTION: BE CAREFUL WHEN ADDING ACID FIRST)

Add 10 ml sulfuric acid with the dispenser being careful to face the vial toward the back wall of the hood in case of reaction. Shake the sample slowly. Vent, then shake vigorously and vent again.
4.4 Add 20 ml of hexane surrogate solution with the dispenser then shake vigorously, venting as necessary. Surrogate Hexane is made by adding 1 surrogate vial to 4 liters of Hexane.
4.5 Allow the solution one minute to separate into distinct solvent and acid layers. If separation does not occur, centrifuge.
4.6 Draw enough of hexane layer to fill a 2 dram vial 3/4 full.
4.7 Add approximately 5 drops of 5% (w/v) permanganate solution. Mix and allow one minute for separation. If separation does not occur, centrifuge.
4.8 With a Pasteur pipette, transfer some of the hexane layer to the solid phase filter. Collect in a 2 ml vial.

Note: See Appendix C for how to make solid phase filters.

**No color should be present in the sample after filtering. If the sample does have color or turbidity continue to filter the hexane through additional solid phase filters until the color or turbidity is removed.

5.0 Gas Chromatograph Operation

5.1 Record the Heritage document numbers for each of the samples in the composite (up to 5 wastestreams containing no more than 10 individual drums) in the PCB log book and assign the PCB sample log book ID number to be used on the GC instrument. Place the sample in the auto sampler tray of the GC in the first available slot in preparation for the run.

Note: See Appendix B for instructions on how to start the GC instruments.

5.2 Check the recent chromatograms for blanks and standards. As a requirement of compliance at least one surrogate blank and one standard must be run on each shift; and the date, time, and standard expiration date must be recorded in the GC Standards Log Book located near the GC instruments.

Note: If the chosen standard has reached its expiration date it must be removed from the auto sampler tray and replaced by another PCB arachnor standard that has not expired.

When run, a PCB pattern of the 0.05ppm standard must appear on the chromatogram or samples are not to be run until the problem has been corrected. The standard should be followed by a hexane blank. The blank should also be free of peaks, if excessive peaks appear the problem must be corrected. (See APPENDIX A for standard preparation.)

5.3 The tech that records the result in the PCB log book is responsible for entering the results into the computer.
HERITAGE
ENVIRONMENTAL SERVICES

STANDARD OPERATING PROCEDURE

APPENDIX A

1. 0.05ppm standard aroclor solution
   A. Dilute 1 ml of the 100ppm stock aroclor solution 1:10 with hexane.
   B. Dilute 1 ml of the intermediate 10ppm aroclor solution 1:200 with the blank surrogate standard spiking solution.

2. Blank surrogate standard spiking solution
   A. Dilute 1 ml of the 200ppm stock surrogate standard spiking solution to four liters of hexane.

APPENDIX B - GC STARTUP

1. GC Instrument #40 (HP5890-Chem Station Program)
   A. Adding Samples to an Existing Run
      a. Click Sequence on the Instr51 GCTop/Environmental page and select Edit Sample Log Table.
      b. Scroll to the first available spot in the table and add the sample's PCB logbook ID number in the Sample Name and Data File boxes. Click OK.
      c. Return to Sequence and click Save and OK in the next 2 popup boxes.
      d. Go to Sequence and click Position and Run.
      e. Click on the Sample Name of the sample to be tested.
      f. Click Run Sequence and OK for the following 2 popup boxes.
   B. Starting a New Run
      a. Choose Sequence on the Instr51 GCTop/Environmental page and select Load.
      b. Scroll to the top of the File Name group and double click 005PCB.S.
      c. Return to Sequence and click on More.
      d. Click Resquence Via's.
      e. Save as the "Current Date" (For Ex. April 11, 2017 the File Name would be 04112017)
      f. Go to Sequence and choose Position and Run.
      g. Add any samples (PCB logbook ID) to the Sample Log Table and click on the Daily Standard to be run (Vial #1) followed by clicking OK.
      h. Change the Operator Name to your Analyst ID.
      i. Change the "Insert Date" in the Data File Directory to the current date (04112017 for ex.)
      j. Click Run Sequence followed by Yes twice in the following popup boxes.
2. **Running Samples on the GC Instrument #14 (HP5890 Plus)**
   
   A. **Starting a New Run**
      
      a. Place the sample vial in the 1st slot of the auto sampler.
      b. Start the instrument by pushing the Sequence and Shift buttons simultaneously on the Integrator (the unit with the roll of paper loaded on to it).
      c. Push the Start button.
      d. Write the PCB logbook ID number on the roll of paper next to the sample’s chromatogram.
      e. When the run is complete compare the sample’s chromatogram to the example chromatograms pinned to the board above the instrument to determine if a PCB pattern is present. When in doubt ask a lead tech or the lab manager for help.
   
   B. **Adding Samples While the Instrument is Currently Running Other Samples**
      
      a. Add the sample vial to the first available slot in the auto sampler and the auto sampler will automatically grab it when it’s ready.
      b. Write the sample’s PCB logbook ID number on the paper next to the sample’s chromatogram.

APPENDIX C

1. **Making Solid Phase Filters**

   a. Place a small wad of glass wool in the tip of a Monster pipet.
   b. With the aid of a funnel fill the Monster pipet 1/4 to 1/3 full with Florisil (Bottle #1).
   c. With the aid of a funnel add approximately 1/2 inch of Silica Gel (Bottle #2).
   d. With the aid of a funnel add approximately 1/2 inch of Sodium Sulfate Anhydrous (Bottle #3).

   • If these instructions are followed closely this should leave approximately 1/2 the pipet volume available to add the hexane from the sample’s PCB prep.
## SOP Revision History

<table>
<thead>
<tr>
<th>Revision</th>
<th>Date</th>
<th>Changes Summary</th>
</tr>
</thead>
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<td>Reformatted SOP</td>
</tr>
<tr>
<td>Revision 2</td>
<td>6/14/12</td>
<td>Removed reference to name brand of filter used in steps 4.1.7 and 4.8.</td>
</tr>
<tr>
<td>Revision 3</td>
<td>4/11/17</td>
<td>Revised 4.4, 4.8, 5.1, and 5.2; added Appendix B and C.</td>
</tr>
</tbody>
</table>
Submitted as Confidential Business Information Per State and Federal Requirements
Submitted as Confidential Business Information Per State and Federal Requirements
Submitted as Confidential Business Information Per State and Federal Requirements
APPENDIX B

QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES
WASTE ANALYSIS PLAN
QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

Heritage Environmental Services, LLC
7901 West Morris Street
Indianapolis, Indiana

IND 093 219 012
1. STATEMENT OF POLICY

It is the policy of Heritage Environmental Services, LLC (the Facility) to meet the needs and expectations of both internal and external customers. This quality assurance/quality control (QA/QC) document was prepared as a companion document to the permit required waste analysis plan for the Facility. The primary function of the waste analysis plan is to specify procedures for sampling and analyzing off-site generated and facility-generated hazardous wastestreams. This wastestream sampling and analysis will be conducted to ensure that:

1. only those hazardous wastes specified on the current RCRA hazardous waste permit are accepted for management at the Facility;
2. information regarding the chemical properties and physical characteristics of each hazardous wastestream will be obtained, evaluated and maintained;
3. each hazardous wastestream considered for acceptance at the Facility is consistent with the description and characteristics of that wastestream's approval information;
4. hazardous wastes will be safely and efficiently stored and managed based on the information gathered concerning each wastestream;
5. wastes generated at the Facility will be appropriately characterized for purposes of disposal and compliance with applicable land disposal restrictions; and
6. stabilized treatment residue shipped off-site for land disposal will meet the applicable treatment standards specified by the Land Disposal Restrictions in 40 CFR Part 268.

The Facility will implement the procedures specified in this QA/QC document and the waste analysis plan to ensure that the data collected during wastestream sampling and analysis are of acceptable quality.
2. **SAMPLING PROCEDURES**

Sampling procedures used during implementation of the waste analysis plan utilize industry accepted procedures for obtaining samples of hazardous waste for characterization and compatibility purposes. Hazardous waste considered for treatment varies widely in physical and chemical composition. The waste may be aqueous based or petroleum based. The waste may be amenable to sampling such as a liquid or dry solid, or may present a challenge by being sticky, thick or clumpy like a sludge. In addition, wastes transported in closed containers which by design allow for gravity separation and prevent examination of the waste as might be done in a closure or site remediation project.

These procedures acknowledge the unique mix of wastes handled for treatment and the challenges which their characteristics present. These procedures are written to support the purpose of the waste analysis plan (to characterize the wastes which are accepted at the Facility, both physically and chemically, in order to assure safe and appropriate storage and treatment of the waste). These procedures utilize, as guidance, the practical aspects of A Test Methods for Evaluating Solid Waste; Physical/Chemical Methods, (SW-846), or other methods appropriate to characterization of the wastes, as well as industry experience.

2.1 **Sample Collection**

Samples will be collected utilizing the piece of equipment most appropriate for the physical characteristics of the waste. Sampling equipment may include: composite liquid waste sampler (Coliwasa); weighted bottle sampler; dipper; thief sampler; sampling triers; augers; shovels; and, sampling scoops.

2.2 **Sample Management**

The purpose of the sampling and analysis activities is to ensure that the waste accepted has been approved, that the waste can be safely stored and subsequently managed, as appropriate, and that the waste identified on the manifest is consistent with the waste considered for acceptance. Time constraints are placed on the waste acceptance process which requires analyses to be performed expeditiously. As a result, samples do not require preservation. In addition, the very nature of many wastes negates any effect of chemical preservatives. For example, it would be fruitless to acid preserve a sample of caustic prior to metals analysis.

Sample labels are affixed to each sample bottle and typically contain the following information: document number, wastestream number, drum number (where appropriate), and date sampled. The document number, wastestream number, and drum number (where appropriate), are internal numbers used for tracking.

2.3 **Sample Tracking**

The drum number assigned to samples from non-bulk containers is normally the same number as that assigned as part of the drum tracking system. Samples from the non-bulk containers are logged into the computer system using information from the drum label.

Samples from bulk containers are logged into the computer system and tracked based on their document number.
3. **ANALYTICAL METHODS**

Analytical methods used during implementation of the waste analysis plan for the waste analysis plan are found in:

1. "Test Methods for Evaluating Solid Waste; Physical/Chemical Methods" (SW-846), current edition, with updates;

2. "Methods for Chemical Analysis of Water and Waste" (EPA publication 600/4-79-020);

3. ASTM's "Annual Book of ASTM Standards;" and


In addition to the methods from the standard references cited above, specific manufacturer's methods for specialized equipment such as the automated Karl Fischer Titrator, the Perstorp FS3100 Cyanide Analyzer, and the Parr 64a Calorimeter, will be employed as appropriate, as well as methods specified in Appendix A of the waste analysis plan. Analytical methods are specified in Appendix A of the waste analysis plan.

Sample analyses are performed by the Facility quality assurance/quality control laboratory follow this Quality Assurance/Quality Control Plan. Appendix A to the waste analysis plan identifies test parameters that are typically performed by each laboratory.
4. CALIBRATION PROCEDURES AND FREQUENCIES

1. Analytical balances are under service contract for periodic calibration and maintenance by an outside vendor.

2. All laboratory hazardous waste technicians, supervisors or professionals are trained in preventative maintenance to minimize equipment failures.

3. All instruments are subject to blank analyses, standard analyses, and spike analyses on a regular basis to evaluate and support the accuracy of results. Table 1 lists QA/QC instrumentation and the applicable calibration frequencies.

4. The precision and accuracy of measurements can be affected by complex sample matrices.

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Action</th>
<th>Time Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orion pH Meters/Probes</td>
<td>Calibration</td>
<td>Once per shift</td>
</tr>
<tr>
<td>Spectrophotometers</td>
<td>Calibration</td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>Standard Analysis</td>
<td>Monthly</td>
</tr>
<tr>
<td></td>
<td>Blank Analysis</td>
<td>Once per shift</td>
</tr>
<tr>
<td>ICP</td>
<td>Standard and Blank Analyses</td>
<td>Every Analysis</td>
</tr>
<tr>
<td>Calorimeter</td>
<td>Standard Analysis</td>
<td>Weekly</td>
</tr>
<tr>
<td></td>
<td>Spike Analysis</td>
<td>As Required</td>
</tr>
<tr>
<td></td>
<td>Calibration</td>
<td>As Required</td>
</tr>
<tr>
<td>Karl Fischer Titrator</td>
<td>Calibration</td>
<td>Weekly</td>
</tr>
<tr>
<td></td>
<td>Standard Analysis</td>
<td>Daily</td>
</tr>
<tr>
<td>Gas Chromatograph</td>
<td>Surrogate Analysis</td>
<td>Every Sample</td>
</tr>
<tr>
<td></td>
<td>Blank and Standard Analyses</td>
<td>Every Day</td>
</tr>
<tr>
<td>Perstorp Cyanide Analyzer</td>
<td>Calibration</td>
<td>As Required</td>
</tr>
<tr>
<td></td>
<td>Standard Analysis</td>
<td>Every Analysis</td>
</tr>
<tr>
<td></td>
<td>Blank Analysis</td>
<td>As Required</td>
</tr>
</tbody>
</table>
5. QUALITY CONTROL CHECKS

1. Wastestream analyses for every tenth laboratory sample are to be run in duplicate.
2. Matrix spike/matrix spike duplicate (MS/MSD) as applicable
3. QA/QC technicians and supervisors are authorized to replicate any given analysis.
6. DATA REPORTING

Upon completion of analysis, laboratory personnel will record results in the Laboratory Information Management System (LIMS). Data to be recorded in the LIMS for quality assurance quality/control purposes for tests conducted by the Facility Quality Assurance/Quality Control Laboratory will include the following:

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Date Analyzed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Result</td>
<td>Method</td>
</tr>
<tr>
<td>Units</td>
<td>Detection Limit</td>
</tr>
<tr>
<td>Analyst</td>
<td></td>
</tr>
</tbody>
</table>

Laboratory analysis performed by the Quality Assurance/Quality Control Laboratory will follow the procedures in the comprehensive Quality Assurance Plan for reporting of data.
7. CORRECTIVE ACTION FOR NON-CONFORMING DATA

Corrective measures may be necessary to address data quality issues identified during implementation of the waste analysis plan. After identification of a data quality problem, measures will be taken to correct the non-conformance. Such corrective action may include, but would not be limited to:

1. Replicate analyses of the material;
2. A comprehensive review of
   a. the sampling procedure;
   b. the integrity of analytical instrumentation (and programming as applicable);
   c. the integrity of any other equipment involved in the testing process;
   d. the applicability of the method to the sample matrix;
   e. the technical proficiency of the analyst;
   f. the susceptibility of the method to analyze interference; and
   g. the necessity for an alternate, approved analytical method and/or instrument.

In the event that the review process does not reveal error, subsequent corrective action pertaining to the ultimate treatment of the material will be determined by laboratory and/or plant management in accordance with the waste analysis plan.
APPENDIX B-1

SAMPLING EQUIPMENT
Composite Liquid Waste Sampler (Coliwasa)

Tapered Stopper

8.35 cm (2 ½”)

1.52 m (5’-0”)

T-Handle

17.8 cm (7”)

4"

Locking Block

Stopper Rod, PVC
0.85 cm (3/8”) O. D.

Pipe, PVC, 4.13 cm (1 5/8”) I. D.
4.28 cm (1 7/8”) O. D.

Stopper, Neoprene, No. 9 with
3/8” S. S. or PVC Nut and Washer

C-B-1-2
Weighted Bottle Sampler

Cork

Washer

Pin

Nut
Figure 9-11. Dipper.

Telescoping Aluminum Pole
2.5 to 4.5 Meters (8 to 15 ft.)

Vise-grip Clamp

Bolt Holes

Beaker
150 to 600 ml
Thief sampler

80–100 cm

1.27–2.54 cm
Sampling triers

122-183 cm
(48-72"

5.08-7.62 cm

60-100 cm

1.27-2.54 cm
APPENDIX C
EXAMPLE WASTESTREAM SURVEY AND SUPPLEMENTAL FORMS
| States | Coolidge, AZ | Indianapolis, IN | Kansas City, MO | Roachdale, IN | HS ||| Reince |
|---|---|---|---|---|---|
| 1. GENERATOR SITE INFORMATION (Heritage #) | | | | | |
| Generator Name: | Customer Name: | Address: | Address: | City, State: | City, State: |
| Zip, County: | Zip, County: | Tech Contact Name: | Contact Name: | Phone: | Phone: |
| Fax: | Fax: | 24 HR Emergency No.: | Email Address: | 24 HR Emergency Contact: | |
| Email Address: | | US EPA ID Number: | | Company Name: | |
| State ID Numbers: | | Generator LOQ | SQC | CESQ/CVQC | Non-Hazardous | Originates in a Foreign Country |
| Status | | Address: | | | City, State, Zip: | |
| Foreign Address (if different from above): | | |
| 4. Generator SIC Code | If SIC 28, 2911, 3312, or 4935, what is the Total Annual Benzene (TAB) in Megagrams/year? | If 3312, generated from Coke Oven Byproduct Recovery Operations? | Yes | No |
| 5. Common Name: | | | | |
| 6. Process Generating Waste: | | | | |
| 7. DOT Description: | | | | |
| 8. Identify US EPA waste codes: | | | | |
| 9. Identify state waste codes: | | | | |
| 10. Universal Waste? | Federal Yes | No | State Yes | No | Identify Type: |
| 11. D001-D045, H001-H005, or F039 underlying or hazardous constituents present? | Yes | No | NA | If yes, list in Section 13. |
| 12. US EPA Form Code: | US EPA Source Code: | | | |
| 13. Waste Composition: Using specific chemical names and/or descriptions of waste composition, list all constituents present in the waste stream, and identify those that are underlying hazardous constituents (UNCs), or F001-F005/F039 hazardous constituents. Attach available analysis or SDS. Total composition must equal or exceed 100%. |
| **Constituents**: | **CAS Number**: | **Range**: | **Units**: | **UNC?**: | **F-Listed?**: |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |
| | | | | Yes | Yes |

15a. Chemical Properties | 15b. Physical Properties at 70°F |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Flash Point (°F)</strong></td>
<td><strong>BTU/lb Range</strong></td>
</tr>
<tr>
<td>&lt;79</td>
<td>Low</td>
</tr>
<tr>
<td>79-110</td>
<td>High</td>
</tr>
<tr>
<td>100-140</td>
<td>pH Range</td>
</tr>
<tr>
<td>&gt;140</td>
<td>High</td>
</tr>
<tr>
<td>140-190</td>
<td>Medium</td>
</tr>
<tr>
<td>&lt;100</td>
<td>Units</td>
</tr>
<tr>
<td>&gt;100</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Density/Specific Gravity</strong></td>
<td><strong>Physical Properties</strong>: <strong>Solid</strong> <strong>Liquid</strong> <strong>Gas</strong> <strong>Semi-Solid</strong> <strong>Powder</strong> <strong>Debris</strong> <strong>Dust</strong> <strong>Dust Hazard?</strong> <strong>Water</strong> <strong>Medium</strong> <strong>High</strong> <strong>N/A</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18SM1209 Rev. 3.8.2018
<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>Column 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value A</td>
<td>Value B</td>
<td>Value C</td>
<td>Value D</td>
</tr>
<tr>
<td>Value E</td>
<td>Value F</td>
<td>Value G</td>
<td>Value H</td>
</tr>
<tr>
<td>Value I</td>
<td>Value J</td>
<td>Value K</td>
<td>Value L</td>
</tr>
</tbody>
</table>

**Example Form**

This is an example of a form that may be used for data collection or administrative purposes. The specific context and purpose of the form are not provided in the image.
**GENERATOR CERTIFICATION**
**REGARDING THE SOURCES OF HALOGENATED HAZARDOUS CONSTITUENTS IN USED OIL CONTAINING MORE THAN 1000 ppm TOTAL HALOGENS**

Heritage has analytically determined that a representative sample of the used oil collected from your company contains over 1000 ppm total halogens (TX). This requires that the presumption of hazardous waste mixing (the so-called "rebuttable presumption" of 40 CFR 279.21) be addressed. This rebuttal has been partially accomplished by the Heritage wastestream survey certification previously signed by a representative of your company. However, a supplemental certification is necessary under the provisions of our used oil analysis plan, required at 40 CFR 279.55.

Attached please find the Heritage laboratories certificate of analysis for the sample at issue. Heritage cannot determine, on the basis of this laboratory analysis, the regulatory category into which the halogenated constituents in your used oil are most properly placed. Please identify the source(s) of the halogenated constituents present in your oil. (Check all that apply).

<table>
<thead>
<tr>
<th>Source Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halogenated additives in the virgin oil</td>
</tr>
<tr>
<td>F-listed spent solvent¹</td>
</tr>
<tr>
<td>Sole active ingredient U-listed commercial chemical product¹</td>
</tr>
<tr>
<td>Deminimis and other releases and losses of U-listed commercial chemical product¹</td>
</tr>
<tr>
<td>Listed manufacturing process waste</td>
</tr>
<tr>
<td>Non-listed manufacturing process waste²</td>
</tr>
<tr>
<td>Non-listed (&lt;10% listed solvents) spent solvent mixture²</td>
</tr>
<tr>
<td>Listed spent solvent from conditionally exempt small quantity generator</td>
</tr>
<tr>
<td>Listed commercial chemical product from conditionally exempt small quantity generator</td>
</tr>
<tr>
<td>Deminimis impurity in non-listed spent solvent or commercial chemical product²</td>
</tr>
<tr>
<td>Non-sole active ingredient in listed or unlisted commercial chemical product²</td>
</tr>
<tr>
<td>Residues from RCRA empty containers, where such containers are reused for waste oil collection</td>
</tr>
<tr>
<td>Used oil collection from Do It Yourself (DIY) sources and used oil aggregation points regulated at 40 CFR 279 - Subpart D</td>
</tr>
<tr>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

¹ These sources cause the used oil to be classified as listed hazardous waste by virtue of the so-called mixture rule (40 CFR 261.3(a)(2)(iv)).

² These sources, if characteristically hazardous, can cause the used oil to be classified as hazardous waste, if the mixture exhibits any characteristic of hazardous waste.

[NOTE: It is Heritage policy not to accept used oils for used oil reclamation when they have been mixed with either listed or characteristic hazardous waste. Such mixtures will only be accepted by Heritage as hazardous waste, when properly profiled and shipped under a Uniform Hazardous Waste Manifest.]

**CERTIFICATION STATEMENTS**

I do hereby swear and certify that the identification of the sources of halogenated constituents in the used oil shipped to Heritage Environmental Services, LLC is true, accurate, and complete. I have reviewed our purchasing records for virgin oils and chemicals, our physical facilities, administrative practices, and operational procedures (or have directed the completion of such a review) and based on this review do willingly make this true, accurate, and complete certification.

Date ____________________________  Print Name ____________________________  Signature ____________________________
Title ____________________________  Witness ____________________________
HERITAGE ENVIRONMENTAL SERVICES, LLC

Heritage Form # HERWS33

Heritage Cylinder Information Form (Questions in bold print are mandatory)

GENERATOR INFORMATION

Generator Name: ________________________________
Generator Location: ________________________________
Wastestream #: ________________________________

CYLINDER INFORMATION

1. Contents Labeled: [ ] Label [ ] Stencil [ ] TAG

2. Original Mfg.’s: [ ] DOT [ ] ICC [ ] CTC

3. DOT Specification: [ ] DOT [ ] ICC [ ] CTC

4. Cylinder Condition: [ ] Poor [ ] Fair [ ] Good/Excellent

5. Leak Test: [ ] Pass [ ] Fail


7. Color(s): ________________________________

8. Quantity: ________________________________

CERTIFICATION

I certify that the information provided above is true, accurate, and complete.

Authorized Signature: ________________________________ Date: ________________________________

Print/Type Name: ________________________________ Company: ________________________________

This Section For Heritage Use Only:

Approved: [ ] Yes [ ] No
[ ] Recycle [ ] Disposal

Initials: ________________________________ Comments ________________________________

DOT Markings: ________________________________
Serial Number: ________________________________

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APPENDIX D

WASTE MANAGEMENT SYSTEM
HAZARDOUS WASTE CODE LISTS

The Hazardous Waste Code List is located in Permit Condition IX.
APPENDIX E

EXAMPLE LAND DISPOSAL RESTRICTIONS NOTICE
INSTRUCTIONS FOR THE COMPLETION OF
THE HERITAGE LAND DISPOSAL RESTRICTIONS
NOTICE AND CERTIFICATION FORM
(Heritage Form HESLDR1-G)

Land disposal restrictions (LDR) regulations at 40 CFR Part 268 require generators to notify treatment/storage facilities in writing of each hazardous waste subject to LDR. Heritage has developed a series of forms to assist our customers in fulfilling this requirement. The number and type(s) of forms you may need are dependent on the type(s) of waste(s) you are shipping. If you have questions regarding how to complete this LDR notice and certification, please contact Heritage Customer Service at (800) 827-4374.

The information required to properly complete the LDR notice should be available in the Heritage Wastestream Profile for your waste(s) and/or 40 CFR Part 268. At a minimum, complete one (1) Heritage Land Disposal Restrictions Notice and Certification (HESLDR1) per wastestream. A new LDR notice must be completed whenever the wastestream changes. Enter the total number of pages included in the LDR notice in the upper right corner of HESLDR1. The continuation pages (HESLDR2) or supplemental form (HESLDR3), where used, must have the page number and total number of pages entered in the upper right corner of each page. When the notice is complete, tear off the original (top copy) of each page and send them with the Uniform Hazardous Waste Manifest. Keep the bottom copy or a photocopy of the original for your records. The remainder of the form is completed as follows:

LAND DISPOSAL RESTRICTION NOTICE AND CERTIFICATION (HESLDR1)

Generator Name: Enter the complete generator name as it appears on the Heritage Stop Ticket or in Item 5 of the Uniform Hazardous Waste Manifest associated with this LDR notice and certification. Enter the generator name only, not the customer name.

USEPA Identification Number: Enter the generator's twelve (12) digit USEPA identification number from Item 1 of the Uniform Hazardous Waste Manifest associated with this LDR notice and certification.

Manifest Tracking Number: Enter the unique 12 digit Manifest Tracking Number assigned in Item 4 of the Uniform Hazardous Waste Manifest associated with this LDR notice and certification.

Waste Stream Number: Enter the Heritage Wastestream Number(s) associated with this LDR notice and certification. This number is provided on the quotation for services from Heritage.

Waste-specific Information: Complete one line in the table for each EPA hazardous waste codes or set of waste codes that applies to the wastestream(s) shipped on the Uniform Hazardous Waste Manifest associated with the LDR notice and certification (Manifests are only required to identify up to 6 waste codes assigned to a wastestream. LDR notices require that all federal hazardous codes be identified and addressed). For each waste code or set entered, an entry must be made in every column of that line as follows. Waste codes may be combined on a single line only if the same information entered in columns 3 through 8 applies to the entire waste code set for a wastestream.

Column 1 - Enter the manifest page number(s) and line item number(s) of the wastestream(s) to which the waste code(s) on that LDR notice line applies. For example, "Page 1, Line 11a" or "Page 1, Line 11a-11b-11c-11d" would indicate the wastestream(s) specified on pages 1, 11a, 11b, and 11c of the manifest document. Multiple manifest page and line item numbers may be entered for each waste code in this column, as long as all of the information entered for that waste code applies to all of those wastestreams. For example, if two different wastestreams each carry a D007 code, the D007 code may be entered once with the two manifest page numbering line references listed on that line in Column 1 (e.g., "Page 1, Line 11a, 11b").

Column 2 - Enter all EPA hazardous waste codes (D, F, K, P, or U) that apply to the wastestream(s) entered on the manifest page(s) and line item(s) indicated in Column 1. Waste codes may be combined on a single line only if the same information entered in columns 3 through 8 applies to the entire waste code set of a manifest document item. If you enter one or more of the following waste codes at any time during the waste recycling, F001-F005 Spent Solvents/Underlying Hazardous Constituents/F039 Leachate Form (HESLDR3) for applicability to your wastestream(s) and enter the appropriate information in Column 5:

- F001, F002, F003, F004 or F005 spent solvents;
- F039 multisource leachate; or
- DD01-DD43 treated in a non-CWA system and that contain Underlying Hazardous Constituents at 40 CFR Part 268.48 ("UHC")
- Decharacterized Waste
- Contaminated Soil using alternative treatment standards per 40 CFR Part 268.49
- Hazardous Debris

Column 3 - Enter the letters "NMW" for a non-wastewater or "NWM" for a wastewater for the wastestream(s) entered on the manifest page(s) and line item(s) entered in Column 1. A wastewater is defined at 40 CFR 268.20(f) as a waste containing less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS).

Column 4 - Enter the number of the waste Subcategory provided with the instructions, if applicable. The waste Subcategories listed for each waste code are also provided at 40 CFR 268.40. Not every waste code is divided into Subcategories. Refer to the list of waste codes and their Subcategories included with these instructions. Only the waste codes with Subcategories are listed. If the waste code entered in Column 2 is not identified in the instructions, the waste code has no Subcategories. Leave the Subcategory portion of the entry blank or enter "NA" if the waste code(s) have no Subcategories.

Column 5 - Enter "NA" for all hazard codes except DD01-DD43 (non-CWA system), F001 through F005, F039 and certain waste types such as decharacterized wastes, contaminated soils, and hazardous debris. Enter "NONE" to indicate no constituents require identification, an actual printed constituent name, the numeric constituent reference for the chemical constituents and waste types referenced above as found on form HESLDR3, or an "X" in the designated box of Column 5 to indicate that you choose to use HESLDR3 to identify constituents. DD01-DD43 wastes intended for treatment in a non-CWA system require a constituent reference

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such as Underlying Hazardous constituents at 40 CFR 268.48. The Subcategory list on the back of HESLDRI indicates which waste code Subcategories require identification of UHCs. D001 wastes to be treated by incineration, fuels substitution, or organics recovery, and certain D003 wastes will not require identification of UHCs. If the waste code entered in Column 2 requires identification of UHCs, there are some present, either enter the numeric chemical reference or the actual chemical name from the Heritage Supplemental F001-F005 Spent Solvent/Underlying Constituents/F009 Leachate Form (HESLDRI). You may also enter an "X" in the designated box provided in Section 5 to indicate that you choose to use HESLDRI to identify constituents. If you use HESLDRI, the completed form must accompany HESLDRI with the shipment. An UHC is defined at 40 CFR 268.40) as any constituent listed in the Universal Treatment Standards table (40 CFR 268.46) present at a concentration above the constituent-specific treatment standard (except inorganic, selenium, sulfide, vanadium and zinc). With the exception of PCBs for D004 - D011 codes, Constituents Subject to Treatment (CST) that must be identified for contaminated soil and hazardous debris encompass the same chemical list as the UHCs. PCBs will require additional information. If the waste code entered in Column 2 is F001-F005 or F009, also enter the numeric chemical reference on HESLDRI, the actual chemical name to identify which F001-F005 or F009 constitutes, or enter an "X" in the designated box, to indicate that you choose to use HESLDRI to identify the constituents that are present in your waste. If you use HESLDRI, the completed form must accompany HESLDRI with the shipment. Chemicals that are uniquely associated with F001-F005 waste codes are identified by the use of all capital names on HESLDRI, and these are the only valid chemicals to select for these waste codes. Chemicals marked by an asterisk are not within the F005 treatment standards, and should not be considered for this hazard code.

Column 6 - Enter the number of the certification statement that applies to the waste. Choose from the two certifications listed below the table on HESLDRI. If appropriate or select one of the less frequently used certifications that are provided on form HESLDRI and may be applicable to your waste stream. On HESLDRI, enter only one number for the certification statement per line as follows: (1) If you are certifying that the waste requires additional treatment, enter "1". (2) To certify that the waste meets the applicable treatment standards, enter "2". If you have a dechlorinated waste, contaminated soil, hazardous debris, lab packed managed by the Alternative Treatment Standard (40 CFR 268.42(a)), a waste subject to an exemption (such as a case by case extension of a deadline or nationwide capacity variance), or open a treatment facility, please refer to the certifications on HESLDRI and enter the appropriate certification number. The additional certifications available on form HESLDRI are for less common waste management scenarios. There may also be a requirement to provide a Land Disposal Restriction Notice to a State Environmental Agency or USEPA. If these apply to any of the wastestreams represented on the manifest, please enter the certification number as appropriate.

Certification: An authorized representative of the generator must sign the certification. Enter the full name (printed or typed), title and company name of the individual signing the certification. Enter the date of certification.

ADDITIONAL LDR NOTICE FORMS

Heritage LDR Continuation Form (HESLDRI)

All the waste codes assigned to the wastestream (there may be more hazard codes assigned to a wastestream than are shown on a manifest line) will not fit on the Heritage LDR Notic and Certification (HESLDRI). Complete a Heritage LDR Continuation Form (HESLDRI). Enter the generator name, USEPA identification number, manifest loading number and Heritage Wastestream Number as they appear at the top of HESLDRI. Continue to list waste codes and corresponding information as instructed above. Enter the page number and total number of pages of the LDR notice (i.e., HESLDRI plus any other Heritage LDR forms) in the upper right corner of each page.

Heritage Supplemental Form F001-F005 Spent Solvent/Underlying Constituents/F009 Leachate Form (HESLDRI)

This form is presented to assist in the completion of Column 8 of HESLDRI. It is used for hazard codes D001 through D043, F001 through F005, F009, Contaminated Soil, Debris, and Dechlorinated Waste. You may either enter the numeric chemical reference(s) from HESLDRI in Column 8 of HESLDRI, write in the actual name of the chemical, or complete HESLDRI by identifying the manifest line and line number adjacent to the appropriate chemical on HESLDRI. If you choose to use HESLDRI, you must place an "X" in the box provided in Column 5 of HESLDRI. HESLDRI must accompany HESLDRI with your shipment. Review the applicable constituents on HESLDRI for the following waste codes as well as Contaminated Soil, Debris, or Dechlorinated Waste:

1. F001, F002, F003, F004, or F005 - The F001-F005 chemical constituents are shown in Capital Letters on HESLDRI. The F005 constituents, 2-Nitropropene and 6-Ethoxyhexanol are not listed on HESLDRI as they require treatment by a specified technology. You may be required to identify other spent solvents on HESLDRI if there is a mixture of these compounds and other spent solvents.

2. F009 - Chemical constituents shown are all "X". In Italy and/or Mexico, an F009 is not F009 constituents.

3. D001-D043 to be treated in a non-CWA system and dechlorinated waste that contain UHCs. An UHC is defined at 40 CFR 268.21) as any constituent listed in the Universal Treatment Standards Table (40 CFR 268.46) present at a concentration above the constituent-specific treatment standard (except inorganic, selenium, sulfide, vanadium and zinc). Constituent specific treatment standards are provided on HESLDRI. D001 wastes treated by incineration, fuels substitution, or organics recovery systems do not require identification of UHCs. Only certain D003 wastes require identification of UHCs. Refer to the Subcategories included with these instructions.

4. Management of contaminated soil, debris, or dechlorinated waste may also require identification of UHCs in accordance with 40 CFR Part 268. If you intend to ship these waste materials, additional requirements beyond completion of the Heritage LDR forms may be required.

Heritage Land Disposal Restrictions Supplemental Certifications (HESLDRI)

If you are intending to ship hazardous or dechlorinated waste to Heritage under a certification statement other than the two certification statements on HESLDRI, you must review HESLDRI and select the correct certification for the type of waste that you intend to ship to Heritage. Supplemental Certifications may be necessary if you are shipping waste subject to an exemption or national capacity variance. Lab Packs Managed Under Alternative Treatment Standards, contaminated soil, and hazardous debris. If you are a treatment facility, you may also be required use one or more of the Supplemental Certifications on HESLDRI. If you use certification (3) or (4) it must be completed and HESLDRI must accompany your shipment. Depending on the regulatory classification and the waste that you intend to ship, other certifications may be required in addition to those specified on HESLDRI for debris subject to regulation at 40 CFR Part 268.

April 2007

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## USEPA HAZARDOUS WASTE CODES WITH SUBCATEGORIES

Refer to this table to determine the appropriate Subcategory for Column 4 of HESLDR1 or HESLDR2 and to determine whether it is necessary to consider HESLDR3. If the waste code you entered in Column 2 of HESLDR1 or HESLDR2 is not in this table enter "NA" in Column 4.

<table>
<thead>
<tr>
<th>Waste Code</th>
<th>Underlying Constituents Required?</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>D001</td>
<td>Y</td>
<td>Ignitable characteristic wastes managed in non-CWA systems (except for the 40 CFR 261.21(a)(1) High TOC Subcategory)</td>
</tr>
<tr>
<td>D002</td>
<td>Y</td>
<td>Corrosive characteristic wastes managed in non-CWA systems</td>
</tr>
<tr>
<td>D003</td>
<td>N</td>
<td>Reactive Sulfides Subcategory (based on 40 CFR 261.25(b)(5))</td>
</tr>
<tr>
<td>D004-</td>
<td>Y</td>
<td>TC waste managed in non-CWA system</td>
</tr>
<tr>
<td>D005-</td>
<td>Y</td>
<td>TC waste managed in CWA system</td>
</tr>
<tr>
<td>F025</td>
<td>N</td>
<td>Light Ends Subcategory</td>
</tr>
<tr>
<td>K006-</td>
<td>N</td>
<td>Anhydrous</td>
</tr>
<tr>
<td>K009-</td>
<td>N</td>
<td>Calcium Sulfate &amp; Low Lead Subcategory</td>
</tr>
<tr>
<td>K071</td>
<td>N</td>
<td>Non-Calcium Sulfate (High Lead) Subcategory</td>
</tr>
<tr>
<td>K106</td>
<td>N</td>
<td>Nonwastewaters residues from RMERC</td>
</tr>
<tr>
<td>P047</td>
<td>N</td>
<td>4,6-Dioxo-1,3-cyclohexadiene</td>
</tr>
<tr>
<td>P055</td>
<td>N</td>
<td>Nonwastewaters, regardless of total mercury content, not incinerator residues and not residues from RMERC</td>
</tr>
<tr>
<td>P065</td>
<td>N</td>
<td>Nonwastewaters residues from RMERC and &lt;250 mg/kg total mercury</td>
</tr>
<tr>
<td>P092</td>
<td>N</td>
<td>Nonwastewaters residues from RMERC and &lt;250 mg/kg total mercury</td>
</tr>
<tr>
<td>U151</td>
<td>N</td>
<td>Nonwastewaters residues from RMERC and &lt;250 mg/kg total mercury</td>
</tr>
<tr>
<td>U240-</td>
<td>N</td>
<td>2,4-D, or 2,4-D salts and esters</td>
</tr>
</tbody>
</table>

*Example Form*
LAND DISPOSAL RESTRICTIONS (LDR) SUPPLEMENTAL CERTIFICATIONS

(3) Waste Subject to Exemption - This waste is subject to an exemption from a prohibition, such as a case-by-case extension, an exemption, or a nationwide capacity variance. The date that the waste is subject to an exemption at 40 CFR Part 268 is [Write in Date].

(4) Lab Pack Managed According to Alternative Treatment Standards at 40 CFR 268.42(c)(6) (INCIN) - I certify under penalty of law that I personally examined and am familiar with the waste and that the lab pack contains only wastes that have not been excluded under Appendix IV to 40 Part 268 and that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at 40 CFR 268.42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment.

(5) Waste Treated to Applicable Treatment Standards (Select one):

(5a) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR Part 268.44 without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (40 CFR 268.7(b)(4)(i))

(5b) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in 268.42, Table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (40 CFR 268.7(b)(4)(ii))

(6) Characteristic Waste Treated to Remove Characteristic (Select one):

(6a) I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.40 or 268.44 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (Identify hazardous constituents that require further treatment on form HESLDR3) (40 CFR 268.7(b)(4)(v))

(6b) I certify under penalty of law that the waste was treated in accordance with the requirements of 40 CFR 268.40 to remove the hazardous characteristic, and that underlying hazardous constituents, as defined in § 268.30, have been treated on-site to meet the § 268.46 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (40 CFR 268.7(b)(4)(v))

(7) Contaminated Soil That Requires Treatment (Select only one of the 4 choices ending with a letter between "a" and "d" (40 CFR 268.7(a)(2))

This contaminated soil does contain listed hazardous waste and

(7a) does exhibit a characteristic of hazardous waste and is subject to the soil treatment standards as provided by § 268.49(c) or the universal treatment standards (identify hazardous constituents that require further treatment on forms HESLDR1 or HESLDR3)

(7b) does not exhibit a characteristic of hazardous waste and is subject to the soil treatment standards as provided by § 268.49(c) or the universal treatment standards (identify hazardous constituents that require further treatment on forms HESLDR1 or HESLDR3)

This contaminated soil does not contain listed hazardous waste and

(7c) does exhibit a characteristic of hazardous waste and is subject to the soil treatment standards as provided by § 268.49(c) or the universal treatment standards (identify hazardous constituents that require further treatment on form HESLDR3)

(7d) does not exhibit a characteristic of hazardous waste and is subject to the soil treatment standards as provided by § 268.49(c) or the universal treatment standards (identify hazardous constituents that require further treatment on form HESLDR3)
(9) **Contaminated Soil Meets Treatment Standards** (Select only one of the 4 choices ending with a letter between 'a' and 'd'. (40 CFR 268.7(a)(3))

This contaminated soil does contain listed hazardous waste and

(iia) does exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.46(c) or the universal treatment standards.

(iib) does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.46(c) or the universal treatment standards.

This contaminated soil does not contain listed hazardous waste and

(iic) does exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.46(c) or the universal treatment standards.

(iid) does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.46(c) or the universal treatment standards.

I certify under penalty of law that I have personally examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment. (40 CFR 268.7(a)(3) and b)(4))

(10) **Contaminated Soil - Treatment Facility Only Certification** (When land disposal is the next sequential process. Must be combined with certification 8. May also need to be combined with Certifications in Items 5 and/or 6 for mixed shipments of other wastes.)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with the treatment standards specified in 40 CFR Part 268.49 without impermissible dilution of the prohibited waste(s). I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment. (40 CFR 268.7(b)(4))

(10) **Hazardous Debris (choose one):**

(iia) This shipment contains hazardous debris that will be treated via the alternative treatment technologies of § 268.46. The contaminants subject to treatment in this hazardous debris are being treated to comply with § 268.46(identify contaminants subject to treatment on forms HESLDR 1 or HESLDR3). The Debris Treatment Technology to be used from 40 CFR 268.45 is (write in specified alternate treatment standard).

(iiib) This shipment contains hazardous debris that will be treated to meet the waste-specific treatment standards for the waste(s) contaminating the debris. The alternative treatment technologies of § 268.45 will not be used (identify contaminants subject to treatment on forms HESLDR 1 or HESLDR3).
### LAND DISPOSAL RESTRICTIONS (LDR)

#### NOTICE AND CERTIFICATION

<table>
<thead>
<tr>
<th>Manifest Page/Line Item</th>
<th>Hazardous Waste Code(s)</th>
<th>Wastewater Or Non-Wastewater (Circle One)</th>
<th>Subcategory (If applicable)</th>
<th>Constituents Referred/Identify Chemicals, Enter &quot;NONE&quot; or &quot;NA&quot;</th>
<th>Applicable Certification (One per line)</th>
</tr>
</thead>
<tbody>
<tr>
<td>WW WW</td>
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<td>WW WW</td>
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<td>WW WW</td>
</tr>
</tbody>
</table>

**Notes:**

- Multiple waste codes allowed on a single line if the same information in Column 3 through 6 applies to the waste code set. To list additional waste codes complete a Heritage LDI Certification Form (HESLDRI). Review the Heritage Supplemental FO01-F043 Spent Solvent Underlying Hazardous Constituents/FO01 Usual Form (HESLDRI) and enter numeric constituent reference if one or more applicable waste codes are FO01, FO02, FO03, FO04, FO05, FO06, or FO01-FO43 or if you choose to use HESLDRI, please place an "X" in the box.
- Circle either "WW" - Wastewater or "NW" - Non-Wastewater based on the waste that is being shipped.
- Enter the Subcategory(ies) applicable to the waste code (See Instructions for Table of Subcategories or 40 CFR 268, c/o). A numerical entry from the Table of Subcategories in the Instructions is acceptable. Leave blank or enter "NA" if there is no Subcategory.
- Enter "NA" for all Hazardous Codes other than FO01-FO43, FO01-FO05, and FO06, Contaminated Soil, Hazardous Debris, and Decontaminated Waste. For these codes or waste types, enter the numerical chemical representation from the Heritage Supplemental FO01-F043 Spent Solvent Underlying Constituents/FO01 Usual Form (HESLDRI) or the chemical name(s). If you choose to use the form HESLDRI please place an "X" in the box in Column 5 and complete HESLDRI by identifying constituents using the appropriate Manifest Page/Line item. If there are no constituents requiring identification enter "NONE" in Column 5.
- Choose from certifications at bottom of HESLDRI and enter number. Supplemental certifications may be required and are provided on form HESLDRS1. In the instructions. Enter only one certification number per line.

See Instructions for Additional Information

If you have a decharacterized waste, contaminated soil, hazardous debris, lab packs managed by the Alternative Treatment Standard, a waste subject to an exemption, or operate a treatment facility please refer to certifications on HESLDRI and enter the appropriate certification number. For Certifications (d) and (f), HESLDRI must accompany HESLDRI.

1. **Waste Does Not Meet Applicable Treatment Standards** - This is a restricted waste that does not meet the applicable treatment standards set forth in Subpart D of 40 CFR Part 268.

2. **Waste Meets Applicable Treatment Standards** - I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

I certify that the information provided on this and any additional pages (HESLDRI; HESLDRI3, HESLDRI4) of this LDR notification is true, accurate and complete.

Authorized Signature: ____________________________

Print or Type Name: ____________________________

Company/Title: ____________________________ Date: ____________________________

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OTC525672_II.8 April 2007

19CHXXX_O C-E-7
**LAND DISPOSAL RESTRICTIONS (LDR) CONTINUATION FORM**

Generator Name: ___________________________  EPA I.D. No.: ___________________________
Manifest Tracking No.: ______________________  Waste Stream Number: ____________________

This form is to be used only as a continuation to the Heritage LDR Notification and Certification (HESLDR1).

<table>
<thead>
<tr>
<th>(1) Manifest Page/Line Item</th>
<th>(2) Hazardous Waste Code(s)</th>
<th>(3) Wastewater Or/Non Wastewater (Circle One)</th>
<th>(4) Subcategory (If applicable)</th>
<th>(5) Constituents Reference (Identify Chemicals, Enter &quot;NONE&quot; or &quot;NA&quot;)</th>
<th>(6) Applicable Certification (One per line)</th>
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**Notes:**

- Multiple waste codes allowed on a single line if the same information in Columns 3 through 5 applies to the waste code set. To list additional waste codes complete a Heritage LDR Continuation Form (HESLDR2). Review the Heritage Supplemental F001-F005 Spent Solvent/Underlying Hazardous Constituents/F093 Leachate Form (HESLDR3) and enter numeric constituent reference if one or more applicable waste codes are F001, F002, F003, F004, F005, F009, or F093. If you choose to use HESLDR1, please place an "X" in the box.

- Circle either "WW" - Wastewater or "NWW" - Non-Wastewater based on the waste that is being shipped.

- Enter the Subcategory(s) applicable to the waste code. See Instructions for Table of Subcategories or 40 CFR 268.40. A numerical entry from the Table of Subcategories in the instructions is acceptable. Leave blank or enter "NA" if there is not a Subcategory.

- Enter "NA" for all Hazard Codes other than D001-D004, F001-F005, and F009, Contaminated Soil, Hazardous Debris, and Deselected Waste. For these codes or waste types, either enter the numerical chemical represented in the Heritage Supplemental F001-F005 Spent Solvent/Underlying Constituents/F093 Leachate Form (HESLDR3) or the chemical name(s). If you choose to use the form HERSLDR1, please place an "X" in the line and complete HERSLDR3 by identifying constituents using the appropriate Manifest Page/Line item. If there are no constituents requiring identification enter "NONE" in Column 5.

- Choose from certifications at bottom of HERSLDR1 and enter number. Supplemental certifications may be required and are provided on form HERSLDR4 in the instructions. Enter only one Certification Number per line.

See Instructions for Additional Information
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1. Flibromethane, dibromomethane, and tetrabromomethane are F003 constituents only.
2. Constituents marked "F" are ULCs and not F039.
3. 2 Ethylhexanoate and 2-Nitrotoluene are F001-F005 Only.
4. NA—"Not Applicable"
5. 2-Ethylhexanol and 2-Ethylhexanol are ULCs and not F039.

OTC/92008/19S HESLDRI Underlying Hazardous Constituents April 2007
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1) Fluoride, cobalt, sodium, lithium, and vanadium are F019 constituents only.
2) Constituents marked "2" are VOCs and not F019.
3) 2 Ethylene glycol and 2 Nitropropane are F001-F005 Only.
4) "NA" - Not Applicable.
5) Zinc is not F019 or a VOC.
<table>
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<th>Chemical Identification Number</th>
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1) Florida, selenium, nitrate, and vanadium are F099 constituents only.
2) Combinations marked "F099" are UHCHs and not F099.
3) F099 and F091 are F091 and F099 Only.
4) US - Not Applicable.
5) Zinc is not F099 or a UHC.
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1) Hexane, octane, nonane, and decane are designated as gasoline only.
2) Constituents marked "X" are units 175 and 185 only.
3) 2-Methylpropene and 2-Methylpropane are units 175-182 only.
4) NA = "Not Applicable"
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<td>0.001</td>
<td>1</td>
<td>Tetrachloroethylene</td>
<td>0.001</td>
<td>1</td>
<td>Tetrachloroethylene</td>
<td>0.001</td>
</tr>
<tr>
<td>232</td>
<td>Hexafluoroisopropanol</td>
<td>0.023</td>
<td>0.1</td>
<td>Hexafluoroisopropanol</td>
<td>0.023</td>
<td>0.1</td>
<td>Hexafluoroisopropanol</td>
<td>0.023</td>
<td>0.1</td>
<td>Hexafluoroisopropanol</td>
<td>0.023</td>
</tr>
<tr>
<td>972</td>
<td>Neopentane (2)</td>
<td>0.012</td>
<td>1.4</td>
<td>Neopentane</td>
<td>0.012</td>
<td>1.4</td>
<td>Neopentane</td>
<td>0.012</td>
<td>1.4</td>
<td>Neopentane</td>
<td>0.012</td>
</tr>
<tr>
<td>157</td>
<td>Vinyl chloride</td>
<td>0.012</td>
<td>5</td>
<td>Vinyl chloride</td>
<td>0.012</td>
<td>5</td>
<td>Vinyl chloride</td>
<td>0.012</td>
<td>5</td>
<td>Vinyl chloride</td>
<td>0.012</td>
</tr>
<tr>
<td>203</td>
<td>vinyl ethers ethers</td>
<td>0.32</td>
<td>35</td>
<td>Vinyl ethers ethers</td>
<td>0.32</td>
<td>35</td>
<td>Vinyl ethers ethers</td>
<td>0.32</td>
<td>35</td>
<td>Vinyl ethers ethers</td>
<td>0.32</td>
</tr>
<tr>
<td>82</td>
<td>Anisole</td>
<td>1.9</td>
<td>73</td>
<td>Anisole</td>
<td>1.9</td>
<td>73</td>
<td>Anisole</td>
<td>1.9</td>
<td>73</td>
<td>Anisole</td>
<td>1.9</td>
</tr>
</tbody>
</table>
INSTRUCTIONS FOR THE COMPLETION OF
THE HERITAGE LAND DISPOSAL RESTRICTIONS
NOTICE AND CERTIFICATION FORM
(Heritage Forms HESLDR1-4)

Land disposal restrictions (LDR) regulations at 40 CFR Part 268 require generators to notify treatment/storage facilities in writing of each hazardous waste subject to an LDR. Heritage has developed a series of forms to assist our customers in fulfilling this requirement. The number and type(s) of LDRs you may need are dependent on the type(s) of waste(s) you are shipping. If you have questions regarding how to complete this LDR notice and certification, please contact Heritage Customer Service at (800) 827-4374.

The information required to properly complete the LDR notice should be included in the Heritage Wastestream Profile for your waste and/or 40 CFR Part 268.1. At a minimum, complete one (1) Heritage Land Disposal Restrictions Notice and Certification (HESLDR1) per wastestream. A new LDR notice must be completed whenever the LDRs change. Enter the total number of page included in the LDR notice in the upper right corner of a HESLDR1. The continuation pages (HESLDR3) or supplemental form (HESLDR3), where used, must have the page number and total number of pages entered in the upper right corner of each page. When the notice is complete, tear off the original (top copy) of each page and send them with the Uniform Hazardous Waste Manifest. Keep the bottom copy or a photocopy of the original for your records. The remainder of the form is completed as follows:

LAND DISPOSAL RESTRICTION NOTICE AND CERTIFICATION (HESLDR1)

Generator Name: Enter the complete generator name as it appears on the Heritage Stop Ticket or in Item 6 of the Uniform Hazardous Waste Manifest associated with this LDR notice and certification. Enter the generator name only, not the customer name.

USEPA Identification Number: Enter the generator's twelve (12) digit USEPA identification number from Item 1 of the Uniform Hazardous Waste Manifest associated with this LDR notice and certification.

Manifest Tracking Number: Enter the unique 12 digit Manifest Tracking Number assigned in Item 4 of the Uniform Hazardous Waste Manifest associated with this LDR notice and certification.

Waste Stream Number: Enter the Heritage Wastestream Number(s) associated with this LDR notice and certification. This number is provided on the quotation for services from Heritage.

Waste-specific Information: Complete one line in the table for all EPA hazardous waste codes or set of waste codes that applies to the wastestream(s) shipped on the Uniform Hazardous Waste Manifest associated with the LDR notice and certification (Manifests are only required to identify up to six state and/or federal codes assigned to a wastestream. LDR notices require that all federal hazardous codes to be identified and addressed). For each waste code or set entered, an entry must be made in every column of that line as follows. Waste codes may be combined on a single line only if the same information entered in columns 3 through 6 applies to the entire waste code set for a wastestream.

Column 1 - Enter the manifest page number(s) and line item number(s) of the wastestream(s) to which the waste code(s) on that LDR notice line applies. For example, if the line includes waste code(s) on page 1, line 11a, the waste code(s) would be indicated on the LDR notice line for page 1, line 11a of the manifest document. Multiple manifest page and page line item numbers may be entered for each waste code in Column 1 as long as all of the information entered for that waste code applies to all of those wastestreams. For example, if two different wastestreams carry a 5007 code, the 5007 code may be entered once with the two manifest page number/line item references listed on that line in Column 1 (e.g., Page 1, 11a, 11b).

Column 2 - Enter all EPA hazardous waste codes (D, F, K, P or U) that apply to the wastestream(s) entered on the manifest page(s) and line item(s) indicated in Column 1. Waste codes may be combined on a single line only if the same information entered in columns 3 through 6 applies to the entire waste code set of a manifest document line. If you enter one or more of the following waste codes, a HESLDR2 (Heritage Supplemental Form) is required for applicability to your waste stream(s) and enter the appropriate information in Column 3:

- F001, F002, F003, F004 or F005 spent solvents.
- F039 multisource leachate.
- D001-D034 treated in a non-CWA system and that contain Underlying Hazardous Constituents at 40 CFR Part 268.44 ("UHC")
- Decharacterized Waste
- Contaminated Soil using Alternative Treatment Standards per 40 CFR Part 268.48
- Hazardous Debris

Column 3 - Circle the letter(s) "NMW" for a non-wastewater or "W" for a wastewater for the wastestream(s) entered on the manifest page(s) and line item(s) entered in Column 1. A wastewater is defined at 40 CFR 268.2(d) as a waste containing less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS).

Column 4 - Enter the number of the waste Subcategory provided in the instructions, if applicable. The waste Subcategory number for each waste code is also provided at 40 CFR 268.49. Not every waste code is divided into Subcategories. Refer to the list of waste codes and their Subcategories included in these instructions. Only the waste codes with Subcategories listed if the waste code entered in Column 3 is not identified in the instructions, the waste code has no Subcategories. Leave the Subcategory portion of the entry blank or enter "NA" if the waste code(s) have no Subcategories.

Column 5 - Enter "NA" for all hazardous waste except D001-D034, (non-CWA system), F001 through F005, F039 and certain waste types such as decharacterized wastes, contaminated soils, and hazardous debris. Enter NONE to indicate no constituents require identification, an actual printed constituent name, the numeric constituent reference for the chemical constituents and waste types referenced above as found on form HESLDR3, or an "X" in the designated box of Column 5 to indicate that you choose to use HESLDR3 to identify constituents. D001-D034 waste intended for treatment in a non-CWA system require a constituent reference...
such as Underlying Hazardous constituents at 40 CFR 268.48. The Subcategory list on the back of HESLDR1 indicates which waste code Subcategories require identification of UHCS. D001 wastes to be treated by incineration, fuels substitution, or organics recovery, and certain D003 wastes will not require identification of UHCS. If the waste code entered in Column 2 requires identification of UHCS, but there are no constituents present, enter "NONE." If the waste code entered in Column 2 requires identification of UHCS and there are some present, either enter the numeric chemical reference or the actual chemical name from the Hazardous Supplemental F001-F005 Spent Solvent/Underlying Constituents/F009 Leachate Form (HESLDR3). You may also enter an "X" in the designated box provided in Column 5 to indicate that you choose to use HESLDR3 to identify constituents. If you use HESLDR3, the completed form must accompany HESLDR1 with the shipment. An UHC is defined at 40 CFR 268.48 as any constituent listed in the Universal Treatment Standards table (40 CFR 268.48), present at a concentration above the constituent-specific treatment standard (except fluoride, selenium, sulfides, vanadium, and zinc). With the exception of PCBs for D004 - D011 codes, Constituents Subject to Treatment (CST) that must be identified for contaminated soil and hazardous debris encompass the same chemical list as the UHCS. PCBs require additional information. If the waste code entered in Column 2 is F001 through F005 or F009, also enter the numeric chemical reference on HESLDR3. The actual chemical name to identify which F001-F005 or F009 constituents, or enter an "X" in the designated box to indicate that you choose to use HESLDR3 to identify the constituents that are present in your waste. If you use HESLDR3, the completed form must accompany HESLDR1 with the shipment. Chemicals that are uniquely associated with F001-F005 waste codes are identified by the use of all capital names on HESLDR3, and these are the only valid chemicals to select for these waste codes. Chemicals marked by an asterisk are not within the F330 treatment standards, and should not be considered for this hazard code.

Columns 6 - Enter the number of the certification statement that applies to the waste. Choose from the two certifications listed below the table on HESLDR1. If appropriate or select one of the less frequently used certifications that are provided on form HESLDR4 and may be applicable to your wastewater. On HESLDR1, enter only one number for the certification statement per line as follows: (1) if you are certifying that the waste requires additional treatment, enter "1"; (2) to certify that the waste meets the applicable treatment standards, enter "2." If you have a dechlorinated waste, contaminated soil, hazardous debris, lab pack-managed by the Alternative Treatment Standard (40 CFR 268.42(c)), a waste subject to an exemption (such as a case by case extension of a deadline or nationwide capacity variance), or operate a treatment facility, please refer to the certifications on HESLDR4 and enter the appropriate certification number. The additional certifications available on form HESLDR4 and for less common waste management scenarios. There may also be a requirement to provide a Land Disposal Restrictions Notice to a State Environmental Agency or the USEPA. If these apply to any of the wastestreams represented on the manifest, please enter the certification number as appropriate.

Certification: An authorized representative of the generator must sign the certification. Enter the full name (printed or typed), title and company name of the individual signing the certification. Enter the date of certification.

ADDITIONAL LDR NOTICE FORMS

Heritage LDR Continuation Form (HESLDR2)

If all the waste codes assigned to the wastestream (there may be more hazard codes assigned to a wastestream than are shown on a manifest line) will not fill on the Heritage LDR Notice and Certification (HESLDR1), complete a Heritage LDR Continuation Form (HESLDR2). Enter the generator name, USEPA identification number, number, manifesting number and Heritage Wastestream Number as they appear at the top of HESLDR1. Continue to list waste codes and corresponding information as instructed above. Enter the page number and total number of pages of the LDR notice (i.e., HESLDR1 plus any other Heritage LDR forms) in the upper right corner of each page.

Heritage Supplemental F001-F005 Spent Solvent/Underlying Constituents/F009 Leachate Form (HESLDR3)

This form is presented to assist in the completion of Column 5 of HESLDR1. If used for hazard codes D001 through D004, F001 through F005, F009, Contaminated Soil, Debris, and Dechlorinated Waste, you may enter the numeric chemical reference(s) from HESLDR3 in Column 5 of HESLDR1. Enter in the actual name of the chemical, or complete HESLDR3 by identifying the wastestream page and the line number adjacent to the appropriate chemical on HESLDR3. If you choose to use HESLDR3, you must place an "X" in the Box provided in Column 5 of HESLDR1 and HESLDR3 must accompany HESLDR1 with your shipment. Review the applicable constituents on HESLDR3 for the following waste codes as well as Contaminated Soil, Debris, or Dechlorinated Waste:

1. F001, F002, F003, F004 or F005 - The F001-F005 chemical constituents are shown in Capital Letters on HESLDR3. The F005 constituents, 2-Nitropropane and 2-Ethoxyethanol, are not listed on HESLDR3 as they require treatment by a specified technology. You may be required to identify other solvents on HESLDR1 if there is a mixture of these compounds and other solvent wastes.
2. F009 - Chemical constituents shown with a "G" in italic and bolded font on HESLDR1 are not F009 constituents.
3. D001-D013 to be treated in a non-CWA system and dechlorinated waste that contain UHCS. An UHC is defined at 40 CFR 268.48 as any constituent listed in the Universal Treatment Standards Table (40 CFR 268.48), present at a concentration above the constituent-specific treatment standard (except fluoride, selenium, sulfides, vanadium, and zinc). Constituent specific treatment standards are provided on HESLDR3. D001 wastes treated by incineration, fuels substitution, or organics recovery system do not require identification of UHCS. Only certain D009 wastes require identification of UHCS. Refer to the Subcategories included with these instructions.
4. Management of contaminated soil, debris, or dechlorinated waste may also require identification of UHCS in accordance with 40 CFR Part 268. If you intend to ship these waste materials, additional requirements beyond completion of the Heritage LDR forms may be required.

Heritage Land Disposal Restrictions Supplemental Certifications (HESLDR4)

If you are intending to ship hazardous or dechlorinated waste to Heritage under a certification statement other than the two certification statements on HESLDR1, you must review HESLDR4 and select the correct certification for the type of waste that you intend to ship to Heritage. Supplemental Certifications may be necessary if you are shipping waste subject to an exemption or national capacity variance, Lab Packs Managed Under Alternative Treatment Standards, contaminated soil, and hazardous debris. If you are a treatment facility, you may also be required to use one or more of the Supplemental Certifications on HESLDR4. If you use certification (3) or (4) it must be completed and HESLDR4 must accompany your shipment. Depending on the regulatory classification and the waste that you intend to ship, other certifications may be required in addition to those specified on HESLDR4 for debris subject to regulation at 40 CFR Part 268.
USEPA HAZARDOUS WASTE CODES
WITH SUBCATEGORIES

Refer to this table to determine the appropriate Subcategory for Column 4 of HESLDR or HESLDR2 and to determine whether it is necessary to consider HESLDR3. If the waste code you entered in Column 2 of HESLDR or HESLDR2 is not in this table enter "NA" in Column 4.

<table>
<thead>
<tr>
<th>Waste Code</th>
<th>Underlying Consents/Constituents Required?</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td>D001</td>
<td>Y</td>
<td>Ignitable characteristic wastes managed in non-CWA systems (except for the 40 CFR 261.21(a)(1) High TEC Subcategory)</td>
</tr>
<tr>
<td>D001</td>
<td>N</td>
<td>Ignitable characteristic wastes managed by incineration, fuel substitution, or organic recovery (except for the 40 CFR 261.21(a)(1) High TEC Subcategory)</td>
</tr>
<tr>
<td>D002</td>
<td>N</td>
<td>Corrosive characteristic wastes managed in non-CWA systems</td>
</tr>
<tr>
<td>D003</td>
<td>N</td>
<td>Reactive Substances Subcategory (based on 40 CFR 261.21(a)(5))</td>
</tr>
<tr>
<td>D003</td>
<td>N</td>
<td>Unexploded ordnance and other explosive devices from an emergency response</td>
</tr>
<tr>
<td>D003</td>
<td>Y</td>
<td>Explosives Subcategory (based on 40 CFR 261.21(a)(6), (7) and (8))</td>
</tr>
<tr>
<td>D003</td>
<td>Y</td>
<td>Other Reactive Substances Subcategory (based on 40 CFR 261.21(a)(6))</td>
</tr>
<tr>
<td>D006</td>
<td>N</td>
<td>Water Reactive Subcategory (based on 40 CFR 261.21(a)(7) and (9))</td>
</tr>
<tr>
<td>D006</td>
<td>N</td>
<td>Reactive Cyanides Subcategory (based on 40 CFR 261.21(a)(9))</td>
</tr>
<tr>
<td>D008</td>
<td>N</td>
<td>Cadmium Containing Batteries Subcategory (Note: This Subcategory consists of nonwaste batteries only. For D008 wastes that fit this Subcategory, enter &quot;NA&quot; in Column 5)</td>
</tr>
<tr>
<td>D009</td>
<td>N</td>
<td>Lead Acid Batteries Subcategory (Note: This Subcategory consists of nonwaste batteries only. For D009 wastes that fit this Subcategory, enter &quot;NA&quot; in Column 5)</td>
</tr>
<tr>
<td>D009</td>
<td>N</td>
<td>Non-CFRC Nonmetallic Batteries Subcategory</td>
</tr>
<tr>
<td>D009</td>
<td>N</td>
<td>Non-CFRC Nonmetallic Batteries Subcategory (Note: This Subcategory consists of nonwaste batteries only. For D009 wastes that fit this Subcategory, enter &quot;NA&quot; in Column 5)</td>
</tr>
<tr>
<td>D009</td>
<td>N</td>
<td>Low Mercury Subcategory (Nonwaste batteries &lt;260 milg total mercury that are not residues from RMERC)</td>
</tr>
<tr>
<td>D009</td>
<td>N</td>
<td>Low Mercury Subcategory (Nonwaste batteries &lt;260 milg total mercury that are not residues from RMERC and not from non-CFRC)</td>
</tr>
<tr>
<td>D009</td>
<td>N</td>
<td>All D009 waste batteries</td>
</tr>
<tr>
<td>D004</td>
<td>N</td>
<td>TC waste managed in CWA system</td>
</tr>
<tr>
<td>D004</td>
<td>N</td>
<td>TC waste managed in non-CWA system</td>
</tr>
<tr>
<td>F005</td>
<td>N</td>
<td>Light Ends Subcategory</td>
</tr>
<tr>
<td>F005</td>
<td>N</td>
<td>Spent Filters/Ads and Dedicates Subcategory</td>
</tr>
<tr>
<td>K006</td>
<td>N</td>
<td>Ashy wastewater</td>
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<tr>
<td>K006</td>
<td>N</td>
<td>Ashy wastewater</td>
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<tr>
<td>K009</td>
<td>N</td>
<td>Calcium Sulfate (Low Lead) Subcategory</td>
</tr>
<tr>
<td>K009</td>
<td>N</td>
<td>Calcium Sulfate (High Lead) Subcategory</td>
</tr>
<tr>
<td>K071</td>
<td>N</td>
<td>Nonwaste batteries residues from RMERC</td>
</tr>
<tr>
<td>K071</td>
<td>N</td>
<td>Nonwaste batteries not residues from RMERC</td>
</tr>
<tr>
<td>K071</td>
<td>N</td>
<td>All K071 waste batteries</td>
</tr>
<tr>
<td>K106</td>
<td>N</td>
<td>Nonwaste batteries &gt;260 milg total mercury</td>
</tr>
<tr>
<td>K106</td>
<td>N</td>
<td>Nonwaste batteries &gt;260 milg total mercury residues from RMERC</td>
</tr>
<tr>
<td>K106</td>
<td>N</td>
<td>Nonwaste batteries &gt;260 milg total mercury not residues from RMERC</td>
</tr>
<tr>
<td>K106</td>
<td>N</td>
<td>All K106 waste batteries</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>4,4-Dichloro-o-cresol</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>4,4-Dichloro-o-cresol salts</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>Nonwaste batteries, regardless of total mercury content, not incinerator residues and not residues from RMERC</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>Nonwaste batteries, regardless of total mercury content, not incinerator residues and residues from RMERC and &gt;260 milg total mercury</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>Nonwaste batteries residues from RMERC and &gt;260 milg total mercury</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>Nonwaste batteries incinerator residues and &gt;260 milg total mercury</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>All P002 waste batteries</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>All P002 waste batteries</td>
</tr>
<tr>
<td>P002</td>
<td>N</td>
<td>All P002 waste batteries</td>
</tr>
<tr>
<td>P008</td>
<td>N</td>
<td>Nonwaste batteries, regardless of total mercury content, not incinerator residues and not residues from RMERC and &gt;260 milg total mercury</td>
</tr>
<tr>
<td>P008</td>
<td>N</td>
<td>Nonwaste batteries, regardless of total mercury content, not incinerator residues and residues from RMERC and &gt;260 milg total mercury</td>
</tr>
<tr>
<td>P008</td>
<td>N</td>
<td>Nonwaste batteries residues from RMERC and &gt;260 milg total mercury</td>
</tr>
<tr>
<td>P008</td>
<td>N</td>
<td>Nonwaste batteries incinerator residues and &gt;260 milg total mercury</td>
</tr>
<tr>
<td>P008</td>
<td>N</td>
<td>All P008 waste batteries</td>
</tr>
<tr>
<td>P008</td>
<td>N</td>
<td>All P008 waste batteries</td>
</tr>
<tr>
<td>P008</td>
<td>N</td>
<td>All P008 waste batteries</td>
</tr>
<tr>
<td>U151</td>
<td>N</td>
<td>Nonwaste batteries &gt;260 milg total mercury</td>
</tr>
<tr>
<td>U151</td>
<td>N</td>
<td>Nonwaste batteries &gt;260 milg total mercury and not residues from RMERC</td>
</tr>
<tr>
<td>U151</td>
<td>N</td>
<td>Nonwaste batteries &gt;260 milg total mercury and not residues from RMERC and not from non-CFRC</td>
</tr>
<tr>
<td>U151</td>
<td>N</td>
<td>All U151 waste batteries</td>
</tr>
<tr>
<td>U240</td>
<td>N</td>
<td>2,4-D</td>
</tr>
<tr>
<td>U240</td>
<td>N</td>
<td>2,4-D salts and wastes</td>
</tr>
</tbody>
</table>

April 2007

19CHXXXX_O C-E-3
LAND DISPOSAL RESTRICTIONS (LDR)
SUPPLEMENTAL CERTIFICATIONS

(3) Waste Subject to Examination: This waste is subject to an exemption from a prohibition, such as a case-by-case extension, an exemption, or a nationwide capacity variance. The data that the waste is subject to an exemption at 40 CFR Part 268 is (Write In Date).

(4) Lab Pack Managed According to Alternative Treatment Standards at 40 CFR 268.42(c) UNC(N): I certify under penalty of law that I have personally examined and am familiar with the waste that the lab pack contains only wastes that have not been excluded under Appendix IV to 40 Part 268 and that this lab pack will be sent to a treatment facility in compliance with the alternative treatment standards for lab packs at 40 CFR 268.42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment.

(5) Waste Treated to Applicable Treatment Standards (Select one):

(5a) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR Part 268.46 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (40 CFR 268.7(b)(4)(i))

(5b) I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the wastewater/organic constituents have been treated by combustion units as specified in 268.42, Table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good faith efforts to analyze for such constituents. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (40 CFR 268.7(b)(4)(ii))

(6) Characteristic Waste Treated to Remove Characteristic (Select one):

(6a) I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.46 or 268.49 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (Identify hazardous constituents that require further treatment on form HESLDSR (40 CFR 268.7(b)(4)(v))

(6b) I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.46 or 268.49 to remove the hazardous characteristic, and that underlying hazardous constituents, as defined in § 268.49, have been treated on-site to meet the § 268.46 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment. (40 CFR 268.7(b)(4)(v))

(7) Contaminated Soil That Requires Treatment (Select only one of the 4 choices ending with a letter between "a" and "f" (40 CFR 268.7(a)(2))

This contaminated soil does contain listed hazardous waste and:

(7a) does exhibit a characteristic of hazardous waste and is subject to the soil treatment standard as provided by § 268.49(c) or the universal treatment standards (Identify hazardous constituents that require further treatment on forms HESLDR1 or HESLDR3)

(7b) does not exhibit a characteristic of hazardous waste and is subject to the soil treatment standards as provided by § 268.49(c) or the universal treatment standards (Identify hazardous constituents that require further treatment on forms HESLDR1 or HESLDR3)

This contaminated soil does not contain listed hazardous waste and:

(7c) does exhibit a characteristic of hazardous waste and is subject to the soil treatment standards as provided by § 268.49(c) or the universal treatment standards (Identify hazardous constituents that require further treatment on form HESLDR3)

(7d) does not exhibit a characteristic of hazardous waste and is subject to the soil treatment standards as provided by § 268.49(c) or the universal treatment standards (Identify hazardous constituents that require further treatment on form HESLDR3)

April 2007

19CHXXX_0 C-E-4
(6) Contaminated Soil - Treatment Standards (Select only one of the 4 choices ending with a letter between 'a' and 'd'). (40 CFR 268.7(a)(3))

This contaminated soil does contain listed hazardous waste and

(a) does exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.49(c) or the universal treatment standards

(b) does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.49(c) or the universal treatment standards

This contaminated soil does not contain listed hazardous waste and

(c) does exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.49(c) or the universal treatment standards

(d) does not exhibit a characteristic of hazardous waste and complies with the soil treatment standards as provided by § 268.49(c) or the universal treatment standards

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information I submitted is true, accurate, and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment. (40 CFR 268.7(a)(3) and (b)(4))

(9) Contaminated Soil - Treatment Facility Only Certification (When land disposal is the next sequential process, must be combined with certification B. May also need to be combined with Certifications in Items 5 and/or 6 for mixed shipments of other wastes.)

I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and believe that it has been maintained and operated properly so as to comply with the treatment standards specified in 40 CFR Part 268.49 without impermissible dilution of the prohibited wastes. I am aware there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment. (40 CFR 268.7(b)(4))

(10) Hazardous Debris (choose one):

(a) This shipment contains hazardous debris that will be treated via the alternative treatment technologies of § 268.45. The contaminants subject to treatment in this hazardous debris are being treated to comply with § 268.45(identify contaminants subject to treatment in forms HESLR1 or HESLR3). The Debris Treatment Technology to be used from 40 CFR 268.45 is [within specified alternate treatment standard]

(b) This shipment contains hazardous debris that will be treated to meet the waste-specific treatment standards for the waste(s) contaminating the debris. The alternative treatment technologies of § 268.45 will not be used [identify contaminants subject to treatment in forms HESLR1 or HESLR3]
### LAND DISPOSAL RESTRICTIONS (LDR) NOTICE AND CERTIFICATION

**Generator Name:** ______________________  **EPA I.D. No.:** ______________________

**Manifest Tracking No.:** ______________________  **Waste Stream Number:** ______________________

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<th>(2) Hazardous Waste Codes*</th>
<th>(3) Wastewater Or Non Wastewater (Circle One)*</th>
<th>(4) Subcategory (if applicable)*</th>
<th>(5) Constituents Reference/Identify Chemicals, Enter &quot;NONE&quot; or &quot;NA&quot;*</th>
<th>(6) Applicable Certification (one per line)*</th>
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* Multiple waste codes allowed on a single line if the same information in Columns 3 through 6 applies to the waste code set. To list additional waste codes complete a Heritage LDL Conversion Form (HESLDR2). Review the Heritage Supplemental FO01-FO05 Spent Solvent/Underlyng Hazardous Constituent/F003 Leachate Form (HESLDR2) and enter numeric constituent reference if one or more applicable waste codes are FO01, FO02, FO03, FO04, FO06, FO08, or FO09 or if you choose to use HESLDR3, please place an "X" in the box.

### If you have a decharacterized waste, contaminated soil, hazardous debris, lab pack, or the Alternative Treatment Standard, a waste subject to an exemption, or operate a treatment facility please refer to certifications on HESLDR4 and enter the appropriate certification number. For Certifications (4) and (10a), HESLDR must accompany HESLDR2.

1. **Waste Does Not Meet Applicable Treatment Standards**: This is a restricted waste that does not meet the applicable treatment standards set forth in Subpart D of 40 CFR Part 268.

2. **Waste Meets Applicable Treatment Standards**: I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D. I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

I certify that the information provided on this and any additional pages (HESLDR2, HESLDR3, HESLDR4) of this LDR notification is true, accurate and complete.

**Authorized Signature:** ______________________  **Print or Type Name:** ______________________

**Company/Title:** ______________________  **Date:** ______________________
**HERITAGE**

**HESLDR2**

**LAND DISPOSAL RESTRICTIONS (LDR)**

**CONTINUATION FORM**

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<th>(2) Hazardous Waste Code(s)</th>
<th>(3) Wastewater Or Non-Wastewater/Circle One(s)</th>
<th>(4) Subcategory (if applicable)</th>
<th>(5) Constituents Reference (identify chemicals, enter &quot;NONE&quot; or &quot;NA&quot; if applicable)</th>
<th>(6) Applicable Certification (one per line)</th>
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*Circle either "WW" - Wastewater or "NWW" - Non-Wastewater based on the waste that is being shipped.*

*Enter the Subcategory(ies) applicable to the waste code (See instructions for Table of Subcategories or 40 CFR 268.40). A numerical entry from the Table of Subcategories in the instructions is acceptable. Leave blank or enter "NA" if there is not a Subcategory.*

*See instructions for additional information.*

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19CHXXXX_0 C-E-7

**April 2007**
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19CHXXX_0

C-E-8
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<td>0.081</td>
<td>1.5</td>
<td>155 (Reg 1)</td>
<td>Methacrylon</td>
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<tr>
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<tr>
<td>214</td>
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<td>0.030</td>
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<td>Methyl tert-butylcarbinol</td>
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<tr>
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1) Thiodicarbonate, sulfides, and vanadium are F039 constituents only.
2) Constituents marked "**" are UHCs and/or F039.
3) Methyleneurethane and 3-Isopropylamine are F001-F005 Only.
4) NA = "Not Applicable"
<table>
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<tr>
<th>Manifest Page Line Item</th>
<th>Chemical Identification Number</th>
<th>Regulated Constituent</th>
<th>Waste Number (FID)</th>
<th>Manifest Page Line Item</th>
<th>Chemical Identification Number</th>
<th>Regulated Constituent</th>
<th>Waste Number (FID)</th>
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<tr>
<td>275</td>
<td>Isocyanate (2)</td>
<td>0.002</td>
<td>14</td>
<td>94</td>
<td>Arsenic</td>
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<td>0.055</td>
<td>13</td>
<td>72</td>
<td>Benzene</td>
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<td>Ethylene</td>
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<td>11 mg/l TLP</td>
</tr>
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<td>6</td>
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<td>Chloroform</td>
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<tr>
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<td>6</td>
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<td>Lead</td>
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<td>72 mg/l TLP</td>
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<td>219</td>
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<td>0.054</td>
<td>6</td>
<td>141</td>
<td>Mercury - Non-Aqueous Form</td>
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<tr>
<td>3</td>
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<td>0.054</td>
<td>6</td>
<td>50</td>
<td>Mercury - All Others</td>
<td>0.15</td>
<td>10 mg/l TLP</td>
</tr>
<tr>
<td>5</td>
<td>1,1-Dichloroethylene</td>
<td>0.054</td>
<td>6</td>
<td>50</td>
<td>Mercury - All Others</td>
<td>0.15</td>
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<tr>
<td>278</td>
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<td>1.8</td>
<td>184</td>
<td>Sodium</td>
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<tr>
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<td>6</td>
<td>185</td>
<td>Silver</td>
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<tr>
<td>277</td>
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<td>6</td>
<td>187</td>
<td>Silica</td>
<td>14</td>
<td>NA</td>
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<td>NA</td>
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<tr>
<td>392</td>
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<td>6</td>
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<td>Silica</td>
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<tr>
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<td>Vanadium</td>
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<td>1 mg/l TLP</td>
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</table>

1. Fluoride, selenium, ruthenium, and vanadium are F099 constituents only.
2. Constituents marked "(2)" are UHCs and not F099.
3. 2-2 HCN and 2-Nitropropane are F010-FO65 Only
4. NA = Not Applicable
5. Zinc is not F099 or a UHC

07CH0006_09 HERITAGE Underlying Hazardous Constituents April 2007/09/2007

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C-E-12
APPENDIX F

ADDITIONAL LAB DEPACK PROCEDURES
DEPACKING/COMPOSITING

The lab depack areas #3 and 4 are divided into different staging/processing areas. The depack department is equipped with portable vacuum equipment that can be moved throughout the processing areas. Lab pack drums to be depacked are moved to one of these areas depending on the compatibility of the material. Only compatible materials are handled within a staging/processing area. Packing material is vacuumed out and the inside containers are placed in a lab cart. Only compatible lab packs are placed on a cart at any one time. The containers removed receive an identification number of the lab pack drum. The cart on which the containers are placed is noted on the container contents form.

Each processing area is equipped with a fume collection under which compatibility checks are conducted. Each area can be equipped with a container for compositing. All the depacking, QA/QC and compositing activities are conducted inside the secondary containment area. Access to water for rinsing is available in area #3 and #4. Only DOT compatible materials are managed in the same compositing/processing area. See Attachment VII for details about the secondary containment system.

Containers are taken off the cart and a bench compatibility test is performed before materials are composited into a composite container. If materials are not compatible with the composite drum, the physical properties are checked to determine the reason of the incompatibility. If the material exhibits the documented physical properties but still reacts with the composite drum, the material is taken individually to the treatment tank for treatment, after a compatibility check with the treatment tank is performed.

The empty containers are triple rinsed using water or appropriate solvent. The rinsate is collected and treated. Containers are disposed after they are triple rinsed and considered "RCRA Empty" (40 CFR 261.7). Vermiculite and/or other packaging material that has been subjected to spillage and hence contaminated is considered waste and will be properly treated and disposed.

LAB PACK TRACKING MECHANISMS

Each drum, once it enters the lab depack area, is given an identification number. The drums are recorded in the barcode system which contains date accepted, generator, document number, uniform hazardous waste manifest identification number, process location, and date (40 CFR 265.73(b)(1)). These are permanent records.

If a sufficient amount of one type of waste (i.e., acids) is present in the lab pack area then that waste can be bulked in a composite container for simplified disposal at the plant. For each waste, a compatibility check is made. The container inventory sheets and/or barcode records are used to track the contents of the composite container through generation to disposal. The composite container is given a number deeming it a "waste" container, which is treated as any drum being disposed of by the Facility.

This composite number is recorded in the barcode system when the composite container is treated (40 CFR 265.73(b)(1)) and includes, the composite number, treatment date, treatment location, disposal time, and comment space are available.

In the event that a waste cannot be composited, the container is individually taken over to the proper treatment tank and disposed directly into the tank (after compatibility check). The container inventory sheet and/or barcode system is used to track the waste. These bar code system contains space for the ID number, treatment tank, date, and time.

When a chemical waste is accepted into this area but cannot be treated at the Facility (e.g., certain mercury compounds or pesticides) it is shipped to a proper disposal site (i.e., reclamer). Brokered materials coming into the Lab Depack Department are segregated at the point of unpacking and
placed on a separate cart. These materials are tracked on/in the container inventory sheet and/or bar code system. A Lab Pack Technician will then repack the brokered materials for off-site treatment storage/disposal. Once packed, the drum will be logged in the barcode system to track the brokered waste. Each lab pack is given an ID number.

INCOMPATIBILITY MANAGEMENT IN LAB DEPACK AREA

Materials accepted in Lab Depack are reviewed by personnel to ensure all materials packed in a lab pack drum are of a compatible DOT hazard class and compatible with other materials in the same lab pack drum. Lab pack drums are unpacked and placed on a lab cart. This practice will eliminate the mixing of incompatible materials on the lab cart. Compatibility checks are also made before compositing any materials by aggregating a bench scale sample of all containers composited; before adding additional quantities to the composite drum, a 10 ml sample is added and reviewed for 1 minute for signs of incompatibility (e.g., off gassing, increase in temperature, polymerization). A thermometer is present in this bench scale sample to immediately identify any increase in temperature. Only materials possessing the same physical properties (i.e., low pH) will be located and handled in the same compositing area (see Print No. 882123 for general arrangement).
MATERIAL NOT ACCEPTED AT THE FACILITY
LAB DEPACK PROGRAM

1. Hazardous waste bearing the hazard codes F020, F021, F022, F023, F026, and F027
2. Hazardous waste mixed with wastes regulated by the Nuclear Regulatory Commission.
3. Explosives forbidden from transportation
4. Hazardous waste mixed with etiological wastes
5. Unstabilized explosives in lab pack containers
6. Hazardous waste mixed with TSCA regulated wastes requiring a commercial storage permit
7. Hazardous waste that is also subject to storage controls by the Drug Enforcement Administration
8. Organic perchlorates
9. Following listed wastes:
   a. P031 Cyanogen
   b. P033 Cyanogen chloride
   c. P096 Hydrogen phosphide
   d. P112 Tetranitromethane
   e. U033 Carbonic difluoride
10. These materials will be approved on a case-by-case basis for processing:
    The following groups’ materials are on our categorized list but must be approved for receiving:
    a. Hydrogen Peroxide at concentrations of 30% and greater.
    b. Pyrophoric liquids or solids
       i. Tributyl aluminum
       ii. Phosphorous
       iii. Ammonium sulfide
    c. Any water or air reactive that must be stored under inert conditions (i.e., argon, oil).
    d. Very highly toxic dusts
       i. Beryllium
       ii. Thallium
       iii. Arsenic
       iv. Barium
       v. Selenium
    e. Shock sensitive materials
       i. Nitro compounds
       ii. Hydrazines
       iii. Azides
ATTACHMENT D
PROCESS INFORMATION
CONTAINER STORAGE
CONTAINER STORAGE PLAN

Heritage Environmental Services, LLC
7901 West Morris Street
Indianapolis, Indiana

IND 093 219 012
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Appendix CSP-B Container Storage Areas Drawings, Capacity Calculations, and Secondary Containment Calculations

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Appendix CSP-C Site Plan Showing Location of Container Storage Areas
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Appendix CSP-E Compatibility Chart
Appendix CSP-F Portable Secondary Containment Devices
Appendix CSP-G Container Storage Area Coating, Waterstop, and Sealer Information
1. INTRODUCTION

Heritage Environmental Services, LLC (Heritage) owns and operates a commercial waste management facility in Indianapolis, Indiana. This facility currently operates under a RCRA Part B permit issued by Indiana Department of Environmental Management. Heritage manages wastes in containers and tanks. This document focuses on the management of containerized waste at the facility.

The wastes received at the facility are characterized in accordance with the procedures in the Waste Analysis Plan. The wastes Heritage is permitted to receive are listed in the Part A and characterized in the Waste Analysis Plan.

Containerized wastes arriving at the treatment facility are accepted by Heritage in accordance with the procedures outlined in the Waste Analysis Plan. The containerized wastes may be staged and stored prior to consolidation or shipment offsite in accordance with this Container Storage Plan. Heritage operates container storage areas that are permitted to store wastes that do not contain free liquids. Heritage operates containment buildings that are permitted for storage and treatment of hazardous waste in containers as well as storage and treatment of hazardous waste in containment buildings. Information concerning storage of containers in containment buildings is provided in the Attachment D Containment Buildings, Process Description. Appendix CSP-C is a site plan that identifies the location of each container storage area at the facility.

The following sections describe container management and operational practices at the facility along with the design and construction information associated with each container storage area at the facility. Appendices to this document provides unit specific information for each of the container storage areas at the facility.
2. CONTAINER MANAGEMENT PRACTICES

The following sections describe management procedures that are applicable to each of the container storage areas at the facility.

2.1. Free Liquids Determination [D-1b(1)]

The facility operates container storage areas that are not permitted to manage wastes with free liquids as defined by the Paint Filter Liquids Test USEPA Method 9095. This Paint Filter Liquids Test is conducted on wastes for containers that are intended for storage in areas that are not permitted to contain free liquids. Absence of free liquids will be demonstrated on 10% of all containers one cubic yard (202 Gallons) or less and 100% for all containers greater than 1 cubic yard in volume (202 Gallons). The results of testing are recorded and maintained in the operating record as described in the facility Waste Analysis Plan.

2.2. Description and Stacking of Containers [D-1a(1); D-1b(2)]

New, reused, or reconditioned containers that meet applicable DOT specifications or have received an exemption from the Department of Transportation (DOT) are used to hold hazardous waste at the facility.

Container sizes range from 1-gallon containers to dump trailers. Common sizes of containers include 55-gallon, 30-gallon, fiber pack containers, cubic yard bags, 330g, totes, and rolloff boxes. Individual lab pack bottles within the lab pack containers are exempt from DOT and typically are lab size bottles. Dimensions for typical DOT containers are provided in Appendix CSP-D.

Appendix CSP-D provides testing requirements for non-bulk packaging and intermediate bulk packaging for DOT containers as well as stacking information. In order to store containers not shown in Appendix CSP-D, the container must meet the performance specification in Appendix CSP-D and the following requirements:

1) the drop test height test requirements of Appendix CSP-D, Table 4;
2) each container to be stacked must be listed in Appendix CSP-D, Table 4;
3) the pallet stacking requirements noted in Table CSP-1; and
4) the container meets the DOT requirements.

Heritage will stack containers in accordance with the requirements of Table CSP-1. Cylinders may also be stored in outer packaging (e.g., drums, boxes, etc.) that provide support following the container stacking guidelines in Table CSP-1 provided that there is a minimum of 2.5 feet of aisle space.

2.3. Container Tracking System [D-1a(1); D-1b(2)]

2.3.1. Container Labeling

Containerized wastes, 500 gallons or less, stored within the permitted container storage areas will have the following information affixed, where applicable:

   Hazardous waste label
   An internal tracking label for hazardous wastes
   A Land Ban date for storage purpose
Note: Containerized waste, greater than 500 gallons, will be tracked in the electronic or paper record using the container’s assigned unit or serial number.

**TABLE CSP - 1**

*Container Stacking Guidelines*  

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>1-5 gal on 1-15 gal</td>
</tr>
<tr>
<td>2</td>
<td>1-5 gal on 1-20 gal</td>
</tr>
<tr>
<td>3</td>
<td>1-5 gal on 1-30 gal</td>
</tr>
<tr>
<td>4</td>
<td>1-5 gal on 1-55 gal</td>
</tr>
<tr>
<td>5</td>
<td>1-5 gallon overpack</td>
</tr>
<tr>
<td>6</td>
<td>2-5 gal</td>
</tr>
<tr>
<td>7</td>
<td>3-5 gal</td>
</tr>
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<td>8</td>
<td>1-15 gal on 1-55 gal</td>
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<td>9</td>
<td>2-15 gal</td>
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<tr>
<td>10</td>
<td>1-20 gal on 1-55 gal</td>
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<tr>
<td>11</td>
<td>1-20 gallon overpack</td>
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<td>12</td>
<td>2-20 gal</td>
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<tr>
<td>13</td>
<td>3-20 gal</td>
</tr>
<tr>
<td>14</td>
<td>1-30 gal on 1-55 gal</td>
</tr>
<tr>
<td>15</td>
<td>Cy box/pallet/cy box/pallet</td>
</tr>
<tr>
<td>16</td>
<td>4-55 gallon/pallet/4-55 gallon/pallet</td>
</tr>
<tr>
<td>17</td>
<td>cy bag/cy bag/pallet</td>
</tr>
<tr>
<td>18</td>
<td>Cy box/pallet/cy bag/pallet</td>
</tr>
</tbody>
</table>

1 Applies to DOT Packing Group I (PGI) and PGII only.
2 Container size/volume designation is based on bar-code description.
3 The heavier container must be placed beneath the lighter container.
4 Applies to containers with no free liquids or to lab packs.
5 Package states, “DO NOT STACK MORE THAN 2 HIGH”.
6 The 4 drums on each pallet must be strapped, taped, or otherwise secured to each other.
7 The bags must be strapped, taped, or otherwise secured to each other and the pallet
8 Applies to containers with no free liquids.
9 For palletized drums, no round bottomed container may be placed or stored such that the container bottom extends beyond the corner of the pallet.
10 Pallets or other stacking structures, which cannot keep permitted containers level and secured, shall not be used to store the permitted containers. This not only applies to damaged pallets, but also to pallets/devices, which are improperly designed or applied.
11 Containers on the bottom pallet must form a level surface before being used to support atop pallet.
This information will typically be found on adhesive labels affixed to the container, although paints or other marking devices may be used.

Lab packs will have a packing list affixed to the outside container that indicates the contents of the lab pack.

Containers of hazardous waste shipped off-site are marked and labeled in accordance with DOT regulations and are manifested in accordance with Federal and State regulations.

2.3.2. Electronic and Paper Record

The electronic and paper records provide the same container tracking information as the internal tracking label and the Land Ban date. These records are sufficient if a containers tracking label becomes damaged or loses adhesion and until repair or replacement of the label is made.

2.3.3. Electronic Tracking System

Containers of hazardous waste entering the Heritage facility and the container storage areas are tracked through the entire storage, staging, processing and/or off-site disposal process. This is accomplished through the use of an electronic tracking and information system.

If for some reason the electronic system is inoperable, the containers of hazardous waste will be tracked using manual recordkeeping methods.

Pertinent information is recorded in the facility operating record for each container of hazardous waste. Following is a list of information items in the Heritage Electronic Tracking System.

1. Heritage-Assigned Container Number
2. Heritage Generator Wastestream Number
3. Uniform Hazardous Waste Manifest Number Incoming
4. Hazardous Waste Codes (may not be all inclusive on container tracking documents)
5. Date of Acceptance
6. Date Processed
7. Size/Volume or Weight of Container where applicable
8. Free Liquids Present? Yes or No If applicable to storage conditions
9. Container Storage Area and Quantity at each area

Heritage may track other information that is not required by regulation. Such items may be eliminated at Heritage's discretion.

2.4. Container Handling Practices [D-1a(2); D-1b(3)]

2.4.1. Closed Containers

In accordance with 40 CFR 264.173(a), containers holding hazardous waste will be closed during storage, except when it is necessary to add or remove waste. In accordance with 264.173(b), containers holding hazardous waste must not be opened, handled, or stored in a manner, which may rupture the container or cause it to leak.
2.4.2. Transporting Containers

Containers are transported within the Heritage facility utilizing various mechanical equipment such as fork lifts, Bobcats, drum dollies, and lab carts at various areas in the plant. The containerized wastes may be moved to the appropriate area prior to processing or shipment offsite. Larger containers stored in the container storage areas are transported using a forklift truck. Containers such as totes are specifically designed to accommodate this mode of transfer. The totes are on legs that enable them to be picked up by a forklift. Since they are very heavy (approximately 1900 - 2000 pounds), manual or any other type of transfer is not possible. Roll-off boxes will be moved into and out of storage areas using equipment that is designed for transporting roll-off boxes.

Employees are trained in the proper techniques for moving containers to ensure that the containers are handled in a manner which would not cause the container to rupture or leak.

2.5. Storage Practices [D-1a(2); D-1b(3)]

The following sections describe storage practices employed at the facility.

2.5.1. Aisle Spacing and Container Arrangements

An inspection aisle space of 2.5 feet is provided between storage aisles. Aisle spacing may be greater than 2.5 feet to accommodate material handling equipment. In each row of a container storage area, containers are stored two (2) abreast, within individual, sloped, containment bays. A minimum of 2.5 feet of aisle space will be maintained between the berms for ease of inspection. This aisle space is sufficient for the movement of a drum dolly. Additionally, incompatible wastes will be separated by two buffer bays, which may contain compatible waste. To maintain compatibility requirements, the individual bays will be organized using the compatibility chart in Appendix CSP-E as a guideline.

Heritage will stack containers in accordance with the requirements of Table CSP-1. Cylinders may also be stored in outer packaging (e.g., drums, boxes, etc.) that provide support following the container stacking guidelines in Table 1 provided that there is a minimum of 2.5 feet of aisle space.

2.5.2. Management Practices for Portable Secondary Containment Devices

The storage of containers with free liquids on containerized pallet/portable secondary containment will be conducted at the facility as follows. Containerized portable secondary containment devices may be used within any container storage area designated for storage of wastes with free liquids:

1) For each containerized pallet/portable secondary containment unit(s), the sump volume must be either labeled on the pallet/unit(s) or documentation containing the sump volume must be maintained within the container storage area.

2) For portable secondary containment units that are connected together that share their sump volume, these units must be labeled for the maximum volume of the shared sumps or documentation showing the total volume (and how it was determined) of the shared sumps must
be maintained within the container storage area.

3) All containerized pallets/portable secondary containment units must be maintained in good condition.

4) Containers may be placed on containerized pallet/portable secondary containment unit provided the following conditions are met:
   a. each container has a volume less than or equal to the volume of the sump (or total volume of shared sump) of the pallet/unit, and
   b. the total volume of all containers on the pallet/unit is less than or equal to ten (10) times the volume of the sump (or total volume of shared sump) of the pallet/unit.

5) Only one container may be stored within a containerized pallet/portable secondary containment unit where the container is not elevated from the sump portion of the pallet/unit.

6) Stacking of containers is limited to Configurations in Table 1 of the Container Stacking Guidelines in Appendix CSP-D, provided there is sufficient sump capacity to meet conditions of Item 4 above.

7) All materials within an individual containerized pallet/portable secondary containment units must be compatible.

8) All material within a containerized pallet/portable secondary containment unit that share a sump must be compatible.

9) The containerized pallets/portable secondary containment units are constructed of material compatible with the waste contained within the pallet.

10) Containers on containerized pallet/portable secondary containment units must be managed so that
   a. Containers holding free liquids are not overhanging the edge of the containment device
   b. Spilled or leaked liquids will be contained within the containerized pallet/portable secondary containment units.
   c. Containers are positioned so that they will not fall off a containerized pallet/portable secondary containment unit.
   d. Between storage of incompatible materials on a containerized pallet/portable secondary containment unit the pallet/unit must be visually inspected for any signs of contamination. If there visible residues or there was a known release, then the pallet/unit must be triple rinsed prior to storing the incompatible material.

OR

Containerized pallets/portable secondary containment units are dedicated to waste streams that are compatible. The containerized pallets/portable secondary containment units are labeled to what materials may be stored or which area.

Technical information, performance specifications, and examples of portable spill containment devices are provided in Appendix CSP-F. Any manufacturer of portable secondary containment constructed of polyethylene, fluorinated polyethylene, or carbon steel materials that meets or exceeds the requirements
of Section 2.5.2 may be used at the facility. Alternative materials of construction for portable spill containment devices may be added as a Class 1 Permit Modification.

2.6. **Compatibility of Wastes in Containers [D-1a(2); D-1b(3)]**

The Heritage facility is designed and operated to manage compatibility of wastes with their containers, compatibility of wastes in containers in the facility storage areas, when consolidating containers at the facility.

2.6.1. **Compatibility of Wastes and Containers**

Management of compatibility with the waste and its containers is conducted as follows:

1) It is the responsibility of the generator of the waste to ensure compatibility of waste material with the shipping container and liner.

2) If upon receipt (into the Heritage facility), it is determined that a container is incompatible with the waste and the integrity of the container is impaired, Heritage may return it to the generator after repackaging. It may be accepted for storage after repackaging in an appropriate container.

3) Once accepted (manifest signed/placed in the storage areas) by Heritage, it is the responsibility of Heritage to ensure the compatibility of the containers with the wastes and to maintain the integrity of the containers.

4) If a container is of questionable integrity, or incompatible with the materials stored, the wastes must be immediately treated, if possible, or transferred to a container with a compatible construction material and/or liner/coating.

5) Materials generated by Heritage are compatible with the material of construction of the containers used and do not require containers that are provided with liners. However, if Heritage generates a material that is not suitable for the containers generally used, Heritage must store the waste in containers that are coated or lined with a material that is compatible with the wastes (to be stored).

2.6.2. **Compatibility of Containers in Storage Areas**

Heritage ensures compatibility of containerized waste within storage and handling areas.

1) Each container is inspected before entering any area for storage as part of the pre-acceptance procedures in the Waste Analysis Plan.

2) If an inspection indicates that the integrity of a container is damaged (i.e. crack, dent, hole), the contents of the containers must be immediately treated or transferred to a container constructed of a compatible material. If an inspection reveals that stacking of containers is not in accordance with the requirements of Section 2.2, the containers will be moved or restacked properly.

3) Compatibility of the wastes within storage areas will be determined from the DOT labels, hazardous waste labels and U.S. DOT Hazardous Classification Guidelines for Shipping and Storage. Only compatible wastes will be stored within specific bays of the container storage areas. A compatibility chart for storing containers is included in Appendix CSP-E. Testing in conformance with compatibility testing specified in the Waste...
Analysis Plan may be performed to determine compatibility for the selection of storage location.

4) Containers of incompatible wastes will not be stored adjacent to each other or within the same storage area. The containers will be separated by means of a berm, a wall, or other appropriate device in accordance with 40 CFR Part 264.175(c). Other appropriate devices will require the approval by the IDEM.

5) Only compatible materials will be stored within a specific bay in areas that are designed and managed for storing wastes without free liquids. Incompatible wastes that do not contain free liquids may be segregated by portable secondary devices from other wastes.

2.6.3. Compatibility During Consolidation of Wastes

Heritage follows specified procedures prior to consolidating wastes at the facility. These procedures include:

1) Incompatible wastes, or incompatible wastes and materials must not be placed in the same container.

2) Analysis prior to consolidation is performed in accordance with the Waste Analysis Plan. Knowledge of the waste, supplemental analysis, and compatibility information from the chemical literature are reviewed as necessary prior to consolidation of wastestreams into containers.

3) Hazardous wastes will not be placed in an unwashed container that previously held an incompatible waste or material. The waste must be placed in a container, which is constructed of materials compatible with the waste to be stored.

2.7. Spills and Leaks [D-1a(3)e]

In accordance with 40 CFR 264.175(b)(5), spilled or leaked waste must be removed from the trench or containment unit in as timely a manner as necessary to prevent overflow of the containment area.

Spilled or leaked waste must be removed from the blind trench drain or from the modular containment floor sump within 24 hours of detection to prevent harm to human health and the environment or prevent overflow of the collection system unless there are extenuating circumstance follow 40 CFR Part 264.175(b)(5). If not practical to remove waste within 24 hours, the facility shall notify IDEM with an explanation and remove the liquids as soon as practical. Waste shall not be allowed to remain in contact with any secondary containment coating or watersstop retrofit system for a greater time than that recommended by the manufacturer. Spill control equipment is described in detail in the Contingency Plan Attachment.

1. Slight spillage will be cleaned up using a shovel or scoop and the material removed may either be returned to the container from which it spilled, if the container is intact, or properly treated.

2. Accumulated liquid may also be removed using spill clean up or removal equipment (e.g., wet & dry vacuum, floor vacuum, wet street cleaner) and properly treated.

Spilled material will be handled properly in accordance with applicable regulatory requirements. Any analysis needed will be performed by fingerprint and QA/QC methods. Containers present at the facility are readily identifiable by the Heritage
2.8. Inspection of Container Storage Areas [D-1a(2); D-1b(3)]

2.8.1. Routine Storage Area Inspections

As required by 40 CFR 264.174, inspections of the Container Storage Areas for appropriate container stacking (See Section 2.2), presence of leaking containers and the deterioration of containers and the containment system caused by corrosion or other factors will be performed. If a container holding hazardous waste is not in good condition or if it begins to leak, the waste must be overpacked, transferred to a container in good condition, or the container must be processed in a manner that does not result in spills or releases while transferring the container for processing. Inspection logs are maintained in the facility operating record. Heritage conducts both daily and weekly inspections of each CSA. Details of the CSA inspection activities are incorporated in the Procedures to Attachment F. Prevent Hazards Section.

2.8.2. Containment Area Inspections – Coatings and Structures

All the coatings applied to the applicable secondary containment systems will be inspected in detail semi-annually and after a reportable quantity ("RQ") release, or a release exceeding coating manufacture exposure limits for any structural damage/corrosion. If an inspection shows that the integrity of the coatings is damaged (e.g., separated from joint, visibly abraded, cracked, etc.), the coatings must be repaired, or replaced with an approved coating, within fifteen (15) days of detection. The nature of the damage to the coating, including the timeframe for the repair or replacement activities, must be maintained in the facility’s operating record. The manufacturer’s specifications and chemical resistance data for coatings, other than coatings permitted in Appendix CSP-F, must be submitted as an appropriate modification for IDEM approval. Coatings must be equivalent to or an upgrade to manufacturer’s specifications and performance standards when considering method of application, chemical compatibility/resistivity, and durability properties as provided in Appendix CSP-F. Information about approved coatings is provided in Appendix CSP-F.

If an inspection detects a crack in the concrete that has compromised the integrity of the coating, the crack must be repaired within fifteen (15) days of detection. The nature of the crack, including the timeframe for the repair or replacement activities, must be maintained in the facility’s operating record. The exact procedure for the crack repair will depend on the characteristics of the crack, but typically will involve grinding out the damaged area, filling the crack with grout, hydraulic grout, caulk or substrate in accordance with American Concrete Institute protocol or other appropriate standard for concrete crack repair. Upon completion of the crack repair, the chemically resistant coating will be repaired or replaced in accordance with the above paragraph.

All the waterstop retrofit systems installed in the applicable secondary containment systems must be inspected in detail semi-annually and after a RQ release, or a release exceeding coating manufacture exposure limits for any structural damage/corrosion. If an inspection shows that the integrity of the waterstop retrofit system is damaged (e.g., separated from joint, visibly
abraded, cracked, etc.), the waterstop retrofit system must be repaired, or replaced with an approved waterstop within fifteen (15) days of detection. The nature of the damage to the waterstop retrofit system, including the timeframe for the repair or replacement activities, must be maintained in the facility's operating record. The manufacturer's specifications and chemical resistance data for waterstops other than the materials specified in Appendix CSP-F must be submitted as an appropriate modification for IDEM approval. Replacement waterstops must be equivalent to or an upgrade to the manufacturer's specifications and performance standards for method of application and chemical compatibility/resistivity properties as provided in Appendix CSP-F.

Approved waterstop retrofit systems for the permitted container and storage areas are contained in Appendix CSP-F.

2.8.3. **Portable Secondary Containment Device Inspections**

Portable containment structures will be used for the storage of free liquids. Sample containment systems are provided in Appendix CSP-F. In service, portable containment units will be inspected in detail semiannually and after a RQ or reportable release or greater for any structural damage/corrosion. If an inspection shows that the integrity of a portable containment unit is damaged (e.g., separated from joint, visibly abraded, cracked, etc.), the containment unit must be repaired, or replaced with a portable containment unit meeting the specifications in Appendix CSP-F, within fifteen (15) days of detection. The nature of the damage to the portable containment unit, including the timeframe for the repair or replacement activities, must be maintained in the facility's operating record. The performance specifications and chemical resistance data for portable containment units, other than containment units constructed of steel, polyethylene, or fluorinated compounds, must be submitted to the IDEM as a Class 1 Permit Modification prior to installation. Portable containment units must meet or exceed the manufacturer's specifications and performance standards for material of construction, method of construction, secondary containment capacity, and chemical compatibility/resistivity properties as provided in Appendix CSP-F.
3. CONTAINER STORAGE AREA INFORMATION

The following sections describe the design, construction, types, and location of container storage areas at the facility. The exhibits of Appendix CSP-A contains specific information for the permit conditions for each container storage area. The exhibits of Appendix CSP-B provide construction information, drawings, and capacity calculations for each container storage area at the facility.

3.1. Facility Overview

Table CSP-2 provides the identification, approximate dimensions, capabilities, and volumes follows for the dimensions and volumes of each of the container storage areas at the facility. Appendices to this document provides unit specific information for each container storage area at the facility. Appendix CSP-C provides a facility drawing that shows the location of each CSA at the facility.

3.2. Ignitable and Reactive Waste [40 CFR Part 264.176]

Containers holding ignitable and reactive waste at the facility are all located at least 50 feet from the facility property line. The site plan in Appendix CSP-C demonstrates that all of the container storage areas are located at least 50 feet from the property boundary.

Smoking is only allowed at designated locations within the facility. None of the locations are near waste processing or storage units.

3.3. Dioxin and Furan Waste [40 CFR Part 264.175(d)]

Heritage is not permitted to accept F020, F022, F023, F026, or F027. As a result, the requirements of 40 CFR Part 264.175(d) are not applicable.

3.4. Secondary Containment System Design [D1a(3)]

A description of each container storage area is provided in the exhibits of Appendix CSP-B. The exhibits of Appendix CSP-B provide construction information, drawings, and capacity calculations for each container storage area at the facility.

3.5. Requirement for Base or Liner to Contain Liquids [D1a(3)a]

Table CSP-2 shows the capacity of each of the containment areas. The exhibits of Appendix CSP-A, Section D-1a(3) Secondary Containment Systems Design and Operation provides details for each of the container storage areas. The exhibits of Appendix CSP-B provide construction information, drawings, and capacity calculations for each container storage area at the facility.

3.6. Containment System Drainage [D1a(3)b; D1b(4)]

A description of each container storage area is provided in the exhibits of Appendix CSP-A, Section D-1a(3) Secondary Containment Systems Design and Operation. The exhibits of Appendix CSP-B provide construction information, drawings, and capacity calculations for each container storage area at the facility.

3.7. Containment System Capacity [D-1a3(c)]

Table CSP-2 shows the capacity of each of the containment areas. The exhibits of Appendix CSP-A, Section D-1a(3) Secondary Containment Systems Design and Operation provides details for each of the container storage areas. The exhibits of Appendix CSP-B provide construction information, drawings, and capacity
calculations for each container storage area at the facility.

3.8. **Control of Run-On [D-1a(3)(d)]**

A description of each container storage area is provided in the exhibits of Appendix CSP-A, Section D-1a(3) Secondary Containment Systems Design and Operation. The exhibits of Appendix CSP-B provide construction information, drawings, and capacity calculations for each container storage area at the facility.

3.9. **Removal of Liquids from Containment System [D-1a(3)(e)]**

A description of each container storage area is provided in the exhibits of Appendix CSP-A, Section D-1a(3) Secondary Containment Systems Design and Operation. A description of the procedures for removing spill liquids from the containment system is provided in Section 2.7.
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<td>252</td>
<td>60.5 X 30</td>
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<td>Not Applicable Inside Building</td>
<td>Watersstopped and Coated Reinforced Concrete Sloped to a Blind Sump and Container Rollers</td>
<td>Yes</td>
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<td>80 X 21</td>
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<td>Watersstopped and Coated Reinforced Concrete Sloped to Blind Sumps</td>
<td>Yes</td>
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<td>17,270</td>
<td>152</td>
<td>80 X 18</td>
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<td>Not Applicable Inside Building</td>
<td>Watersstopped and Coated Reinforced Concrete Sloped to Blind Sumps</td>
<td>Yes</td>
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<td>11,400</td>
<td>200</td>
<td>32 X 30</td>
<td>15 Units</td>
<td>Not Applicable Inside Building</td>
<td>Modular Containment Pans or Portable Container Devices on Reinforced Concrete</td>
<td>Yes</td>
<td>75 per unit(3)</td>
<td>660(1)</td>
<td>12(4)</td>
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<td>35 per unit(3)</td>
<td>240(1)</td>
<td>4(4)</td>
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<td>Inside Plant #1</td>
<td>7,260</td>
<td>127</td>
<td>30 X 21</td>
<td>9 Units</td>
<td>Not Applicable Inside Building</td>
<td>Modular Containment Pans or Portable Container Devices on Reinforced Concrete</td>
<td>Yes</td>
<td>75 per unit(3)</td>
<td>660(1)</td>
<td>12(4)</td>
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<td>35 per unit(3)</td>
<td>240(1)</td>
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<td>Container Storage Area - 7</td>
<td>Inside Plant #1</td>
<td>10,200</td>
<td>180</td>
<td>3957 R(3)(4)</td>
<td>15 units</td>
<td>Not Applicable Inside Building</td>
<td>Modular Containment Pans or Portable Container Devices on Reinforced Concrete</td>
<td>Yes</td>
<td>75 per unit(3)</td>
<td>660(1)</td>
<td>12(4)</td>
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<tr>
<td>Container Storage Area - 8</td>
<td>Southwest Corner of Facility</td>
<td>72,000</td>
<td>1309 (10 roll-off boxes)</td>
<td>65 X 60</td>
<td>1</td>
<td>Sloped Entrance Away from Unit and Stopped to Blind Sumps in Unit</td>
<td>Reinforced Concrete Sloped to Blind Sumps</td>
<td>No</td>
<td>Not applicable</td>
<td>72,000</td>
<td>1309 (10 roll-off boxes)</td>
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<td>Inside Plant #2</td>
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<td>235 (64 cy boxes)</td>
<td>37X31</td>
<td>1</td>
<td>Not Applicable Inside Building</td>
<td>Watersstopped and Coated Reinforced Concrete, contains a Blind Sump</td>
<td>Yes</td>
<td>319.6</td>
<td>1,235</td>
<td>255 (64 cy boxes)</td>
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<td>60</td>
<td>40X11</td>
<td>5 units</td>
<td>Not Applicable Inside Building</td>
<td>Modular Containment Pans or Portable Container Devices on Reinforced Concrete</td>
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<td>36 X 25</td>
<td>4 units</td>
<td>Not Applicable Inside Building</td>
<td>Modular Containment Pans or Portable Container Devices on Reinforced Concrete</td>
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<td>75 per unit(3)</td>
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<td>10,880</td>
<td>192</td>
<td>57X43</td>
<td>16 units</td>
<td>Not Applicable Inside Building</td>
<td>Modular Containment Pans or Portable Container Devices on Reinforced Concrete</td>
<td>Yes</td>
<td>75 per unit(3)</td>
<td>660(1)</td>
<td>12(4)</td>
</tr>
<tr>
<td>Container Storage Area - 13</td>
<td>Solids Handling Bldg</td>
<td>5,440</td>
<td>96</td>
<td>43 X 41 R(3)</td>
<td>8 units</td>
<td>Not Applicable Inside Building</td>
<td>Watersstopped and Coated Reinforced Concrete, Sloped to a Blind Sump and Container Rollers</td>
<td>Yes</td>
<td>846.74 per roller bay</td>
<td>2,640 roller</td>
<td>48 per roller(12)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>76 per pallet unit(13)</td>
<td>660(1)Pallet</td>
<td>12 per pallet(12)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Container Storage Area - 14</td>
<td>Inside Plant #3</td>
<td>32,880</td>
<td>588</td>
<td>4526 R(3)</td>
<td>8 Roller Bays</td>
<td>Not Applicable Inside Building</td>
<td>Watersstopped and Coated Reinforced Concrete, Sloped to a Blind Sump and Container Rollers</td>
<td>Yes</td>
<td>1,153.27</td>
<td>4,840</td>
<td>88(8)</td>
</tr>
<tr>
<td>Container Storage Area - 15</td>
<td>Inside Plant #3</td>
<td>145,200</td>
<td>2,640</td>
<td>11968 R(3)</td>
<td>30</td>
<td>Not Applicable Inside Building</td>
<td>Watersstopped and Coated Reinforced Concrete, Sloped to a Blind Sump and Container Rollers</td>
<td>Yes</td>
<td>1,153.27</td>
<td>4,840</td>
<td>88(8)</td>
</tr>
<tr>
<td>Container Storage Area - 16</td>
<td>Inside Plant #3</td>
<td>33,320</td>
<td>588</td>
<td>8051 R(3)</td>
<td>49</td>
<td>Not Applicable Inside Building</td>
<td>Modular Containment Pans or Portable Container Devices on Reinforced Concrete</td>
<td>Yes</td>
<td>75 per unit(3)</td>
<td>660(1)</td>
<td>12(4)</td>
</tr>
<tr>
<td>Container Storage Area - 17</td>
<td>Outside Plant #3</td>
<td>32,640</td>
<td>503 (2 dump trailers)(11)</td>
<td>66 X 32</td>
<td>1</td>
<td>Sloped Entrance Away from Unit and Stopped to Blind Sumps in Unit</td>
<td>Reinforced Concrete Sloped to Blind Sumps</td>
<td>No</td>
<td>Not applicable</td>
<td>32,640</td>
<td>503 (2 dump trailers)(11)</td>
</tr>
<tr>
<td>Container Storage Area - 18</td>
<td>Outside Plant #3</td>
<td>130,560</td>
<td>2373 (8 dump trailers)(11)</td>
<td>108.5 X 76</td>
<td>1</td>
<td>Sloped Entrance Away from Unit and Stopped to Blind Sumps in Unit</td>
<td>Reinforced Concrete Sloped to Blind Sumps</td>
<td>No</td>
<td>Not applicable</td>
<td>130,560</td>
<td>2373 (8 dump trailers)(11)</td>
</tr>
<tr>
<td>CONTAINER STORAGE CAPACITY</td>
<td></td>
<td>585,060 Gal.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2373</td>
<td>(8 dump trailers)(11)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(1) = Tentative / Under Construction
(2) = Run-On / Run-Off
(3) = Containment Volume Per Unit
(4) = Maximum Volume Per Bay
(5) = Maximum Volume Per Bay (55-gal drums)
(11) = (2 dump trailers)
See Appendix CSP-A for location of unit at the facility.

(3) Determined by dividing Permit Storage Capacity (gallons) by 55. The listed number of containers is 55-gallon equivalents; the actual number of containers can be greater or lesser based on container sizes. Note: for areas using portable containment devices, the maximum number of 55-gallon containers is based on containment volume of the device. For example, a device with 680 gallons containment is sufficient for 12 containers with 55 gallons in volume each. Fifteen (15) such containment units in CSA 7 would equal 180 55-gallon containers.

(4) Additional information is provided in Exhibits 1 through 18 of Appendices CSP-A and CSP-B.

(5) If a container storage area can manage free liquids, the area can also manage materials that do not contain free liquids.

(6) For CSA-1, CSA-2, CSA-3, CSA-4 and CSA-17 the ideal container arrangement is based on storing double stacked 55 gallon containers.

For CSA-5, CSA-6, CSA-7, CSA-12, CSA-13, CSA-14, CSA-15 and sub areas of CSA-16 the ideal container arrangement is based on combinations of Ultra-Spill Deck P8, P4, and/or P2. (i.e., P9 - 30-gallon container stacked on 55-gallon containers (4 30-gallon containers and 4 55-gallon containers), P4 - 30-gallon container stacked on a 35-gallon container (8 30-gallon containers), and P2 - 15-gallon container stacked on a 15-gallon container (4 15-gallon containers)). Current capacities of CSA 5, 6, 7, 12-16 are based upon the current configuration of the modular containment devices specified in Exhibit 7 of Appendixes A and B.

For CSA-8 the ideal container arrangement is based upon storing 10 roll-off boxes.

For CSA-11 the ideal container arrangements is based on storing double stacked cy boxes (64 total).

For CSA-19 and CSA-20 the ideal container arrangement is base on storing dump trailers, 2 and 8 respectively.

(7) Determined by dividing Maximum Volume per Bay (gallons) by 55. Ultra-Spill Decks P2 and P4 can only be used for 55-gallon containers when multiple sumps are connected. No 55-gallon containers may be stored on the module if the module is independent or connected to modules such that the combined sump capacity is less than 55 gallons.

(8) Any type, number, size, or configuration of container may be present as long as aisle space is approximately 2.5 feet, container stacking conforms with the permit requirements, and the largest container does not exceed the volume of secondary containment for the containers storage bay or portable unit, including configurations where multiple portable units have sumps connected.

(9) Based on combinations of Ultra-Spill Deck P8, P4, and/or P2. The P8 has 75-gallon containment capacity, P4 has a 35-gallon containment capacity, and the P2 has a 17.5-gallon containment capacity. If Portable Containment Devices are used, see Table CSP-3 for the individual capacities for these units.

CSA 7, CSA 16, CSA 17, and CSA 18 are "L" shaped, see drawing in corresponding exhibits in Appendix CSP – B for area dimensions.

CSA 15 is rectangle, but is subdivided by a low wall resulting in two subareas. See drawing in Appendix CSP – B Exhibit 13 for subarea dimensions.

(11) Determined based on a dump trailer 8 feet x 32 feet x 7 feet, 16,320 gallons.
<table>
<thead>
<tr>
<th>Company</th>
<th>Name</th>
<th>Part Number</th>
<th>Sump capacity (gallons)</th>
<th>Containers Elevated</th>
<th>Max # of 55-gal drums</th>
<th>page in D-CSP-F</th>
</tr>
</thead>
<tbody>
<tr>
<td>UltraTech</td>
<td>Ultra-IBC Spill Pallet Plus</td>
<td>1157 and 1158</td>
<td>365</td>
<td>Yes</td>
<td>4&lt;sup&gt;(4)&lt;/sup&gt;</td>
<td>94</td>
</tr>
<tr>
<td></td>
<td>Ultra-Twin IBC Spill Pallet</td>
<td>1140 and 1144</td>
<td>535</td>
<td>Yes</td>
<td>4&lt;sup&gt;(5)&lt;/sup&gt;</td>
<td>95</td>
</tr>
<tr>
<td>ENPAC</td>
<td>Poly-Spillpallet 2000</td>
<td>5253-YE</td>
<td>58</td>
<td>Yes</td>
<td>2 45-gal</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Low-Profile In-Line Poly Spillpallet</td>
<td>EN-5102-YE</td>
<td>66</td>
<td>Yes</td>
<td>4</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Poly-Spillpallet 6000</td>
<td>EN-5001-YE</td>
<td>83</td>
<td>Yes</td>
<td>4</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Poly-Slim-Line 6000</td>
<td>EN-5400-YE</td>
<td>66</td>
<td>Yes</td>
<td>4</td>
<td>86</td>
</tr>
<tr>
<td>GATOR</td>
<td>2 drum, in-line</td>
<td>28234, 28236</td>
<td>66</td>
<td>Yes</td>
<td>2</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>3 drum, in-line</td>
<td>28703, 28713</td>
<td>75</td>
<td>Yes</td>
<td>3</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>4 drum, in-line</td>
<td>28704, 28714</td>
<td>75</td>
<td>Yes</td>
<td>4</td>
<td>87</td>
</tr>
<tr>
<td></td>
<td>4 drum, square</td>
<td>28254, 28256</td>
<td>72</td>
<td>Yes</td>
<td>4</td>
<td>87</td>
</tr>
<tr>
<td>Big Mouth</td>
<td>4-drum pallet</td>
<td>DP4</td>
<td>110</td>
<td>Yes</td>
<td>4</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>3-drum pallet</td>
<td>DP3</td>
<td>65</td>
<td>Yes</td>
<td>3</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>2-drum pallet</td>
<td>DP2</td>
<td>61</td>
<td>Yes</td>
<td>2</td>
<td>88</td>
</tr>
<tr>
<td></td>
<td>Secondary Containment All Steel Pallets</td>
<td>BMS-2-DP</td>
<td>75</td>
<td>Yes</td>
<td>2</td>
<td>99</td>
</tr>
<tr>
<td>Unknown</td>
<td>Economy 2-drum basin</td>
<td>ECD200</td>
<td>61</td>
<td>No</td>
<td>2 (1)&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>89</td>
</tr>
<tr>
<td>Unknown</td>
<td>Economy 4-drum basin</td>
<td>ECD400</td>
<td>65</td>
<td>No</td>
<td>4 (1)&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>89</td>
</tr>
<tr>
<td>Unknown</td>
<td>Econo-Stacker</td>
<td>ESS299</td>
<td>65</td>
<td>No</td>
<td>4 (1)&lt;sup&gt;(1)&lt;/sup&gt;</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td><strong>Ultra-SpillDeck System</strong> - multiple modules may be connected to combine secondary containment capacity**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P1 Module</td>
<td>1321</td>
<td>11</td>
<td>Yes</td>
<td>1 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P2 Module</td>
<td>1086</td>
<td>17.5</td>
<td>Yes</td>
<td>2 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P4 Module</td>
<td>1072</td>
<td>35</td>
<td>Yes</td>
<td>4 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P6 Module</td>
<td>1175</td>
<td>66</td>
<td>Yes</td>
<td>6 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P8 Module</td>
<td>1075</td>
<td>75</td>
<td>Yes</td>
<td>8 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>90</td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P1 Flourinated</td>
<td>1323</td>
<td>11</td>
<td>Yes</td>
<td>1 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P2 Flourinated</td>
<td>1324</td>
<td>22</td>
<td>Yes</td>
<td>2 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Ultra-SpillDeck P4 Flourinated</td>
<td>1325</td>
<td>44</td>
<td>Yes</td>
<td>4 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>92</td>
</tr>
<tr>
<td></td>
<td>Ultra-Spill Pallet P2 Flourinated</td>
<td>1212, 1213</td>
<td>66</td>
<td>Yes</td>
<td>2 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>93</td>
</tr>
<tr>
<td></td>
<td>Ultra-Spill Pallet P4 Flourinated</td>
<td>1232, 1233</td>
<td>66</td>
<td>Yes</td>
<td>4 per module&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>93</td>
</tr>
</tbody>
</table>

**Notes:**
1. For portable containment devices that do not elevate the containers, a maximum of one container is allowed.
2. The largest container that may be stored in the portable containment device is the sump capacity or the combined sump capacity for the connected SpillDeck modules.
3. Table CSP-3 is provided to summarize technical information for example secondary containment devices that meet the performance specifications in Appendix CSP-F. Other secondary containment devices that meet or exceed the performance specifications in Appendix CSP-F may be used by the facility.
4. Maximum of one IBC with a maximum volume of 365 gallons, or four 55-gallon drums.
5. Maximum of two IBC with a maximum volume of 365 gallons, or one with a volume of 366 to 635 gallons, or four 55-gallon drums.
6. For the Ultra-Spill Deck modules, multiple modules must have the sumps connected to have at least 55 gallons of secondary containment capacity (e.g., 4 of the P2 Modules; or 2 P4 modules) to be able to store 55-gallon containers. No 55-gallon containers may be stored on the module if the module is independent or connected to modules such that the combined sump capacity is less than 55 gallons.
APPENDIX CSP-A

CONTAINER STORAGE AREA INFORMATION
APPENDIX CSP-A

EXHIBIT-1

CONTAINER STORAGE AREA 1
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 1 ("CSA 1"). CSA 1 is located in the Plant #1 Building and is designated for storage of containers with or without free liquids. CSA 1 is sixty and one-half feet (60.5') wide by thirty feet (30') long. The area is divided into nine (9) berm'd bays. A maximum of 25,740 gallons may be stored in CSA-1. Each bay is fitted with roller conveyors, which serve to protect the containers from contact with any spilled liquids.

D-1a Containers With Free Liquids

CSA 1 is located in the Plant #1 Building. CSA 1 is divided into nine (9) bays. A maximum of 3,500 gallons of hazardous waste containing free liquids may be stored in each bay of CSA 1. CSA 1 in aggregate may contain a maximum 25,740 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each bay of CSA 1 does not exceed 350 gallons.

D-1a(3) Secondary Containment Systems Design and Operation

The containment volume for each bay in CSA 1 is 350.09 gallons. Based on 40 CFR 264.175(b)(3), the largest container with free liquids, which can be stored in each bay is 350 gallons. Each bay of CSA - 1 has adequate containment to store 3,500.9 gallons of hazardous waste containing free liquids for a total volume of 31,508 gallons. A maximum volume of 3,500 gallons per bay. Supporting documentation of the containment volume for CSA 1 is attached. Under an idealized maximum container arrangement using double stacked 55-gallon containers each bay within CSA-1 will hold 2,860 gallons.

Requirement for the Base or Liner to Contain Liquids

Each bay is independently constructed and sloped to a separate blind trench to prevent mixing of incompatible wastes. The base and the walls of the secondary containment bays for CSA 1 are six-inch (6") continuous poured, reinforced, monolithic concrete (with Portland Cement) construction. See Appendix CSP-G for MSDS for concrete.

Waterstops are located at the construction joint between the base of the secondary containment and the trench basin of the secondary containment systems for CSA 1. A waterstop retrofit system consisting of a joint sealer that can be visually inspected has been installed in conjunction with the waterstops to prevent liquid migration at the construction joints. Specifications for the waterstops and joint sealers are included in Appendix CSP-G.

The secondary containment floors and walls of CSA 1 are coated with chemically resistant, non-reactive and impermeable coating. Specifications for coatings are included in Appendix CSP-G. The manufacturer's specifications and chemical resistance data for chemically resistant coatings other than the materials specified in Appendix CSP-G must be submitted as an appropriate modification for IDEM approval.

Containment System Drainage

Each bay in CSA 1 is sloped (1%) to a five-inch (5") deep blind trench drain dedicated to each individual bay.

Containment System Capacity

Each bay in CSA 1 has a secondary containment volume totaling 350 gallons as demonstrated in calculations provided. A maximum of 3,500 gallons may be stored in each bay at any one time. Under an idealized maximum container arrangement using double stacked 55-gallon containers each bay within CSA-1 will hold 2,860 gallons.
The maximum permitted volume of hazardous waste that may be stored in CSA 1 totals 25,740 gallons.

**Control of Run On**

Run-on is prevented by conducting all container storage activities at CSA – 1 indoors. CSA-1 is located in a building that is above grade and curbed at one overhead door. The slope on the exterior asphalt pavement at the overhead door is away from the door preventing run-on.

**Removal of Liquids**

The containment system in CSA 1 consists of individual secondary containment bays that are sloped to a dedicated, five inch (5") deep trench drain collection system that is not provided with a pump or piping. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-2

CONTAINER STORAGE AREA 2
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 2 ("CSA 2"). CSA 2 is located in the Plant #1 Building and is designated for storage of containers with or without free liquids. CSA 2 is thirty-nine and one half (39.5) feet long by thirty feet (30') long. The area is divided into six (6) bermed bays. A maximum of 17,160 gallons may be stored in CSA-2. Each bay is fitted with roller conveyors, which serve to protect the containers from contact with any spilled liquids.

D-1a Containers With Free Liquids

CSA 2 is located in the Plant #1 Building. CSA 2 is divided into six (6) bays. A maximum of 3,500 gallons of hazardous waste containing free liquids may be stored in each bay of CSA 2. CSA 2 in aggregate may contain a maximum 17,160 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each bay of CSA 2 does not exceed 350 gallons.

D-1a(3) Secondary Containment Systems Design and Operation

The containment volume for each bay in CSA 2 is 350.09 gallons. Based on 40 CFR 264.175(b)(3), the largest container with free liquids, which can be stored in each bay is 350 gallons. Each bay of CSA 2 has adequate containment to store 3,500.9 gallons of hazardous waste containing free liquids for a total volume of 21,005 gallons. A maximum volume of 3,500 gallons per bay. Supporting documentation of the containment volume for CSA 2 is attached. Under an idealized maximum container arrangement using double stacked 55-gallon containers, each bay within CSA-2 will hold 2,860 gallons.

Requirement for the Base or Liner to Contain Liquids

Each bay is independently constructed and sloped to a separate blind trench to prevent mixing of incompatible wastes. The base and the walls of the secondary containment bays for CSA 2 are six-inch (6") continuous poured, reinforced, monolithic concrete (with Portland Cement) construction. See Appendix CSP-G for MSDS for concrete.

Waterstops are located at the construction joint between the base of the secondary containment and the trench basin of the secondary containment systems for CSA 2. A waterstop retrofit system consisting of a joint sealer that can be visually inspected has been installed in conjunction with the waterstops to prevent liquid migration at the construction joints. Specifications for the waterstops and joint sealers are included in Appendix CSP-G.

The secondary containment floors and walls of CSA 2 are coated with chemically resistant, non-reactive and impermeable coating. Specifications for coatings are included in Appendix CSP-G. The manufacturer's specifications and chemical resistance data for coatings other than the materials specified in Appendix CSP-G must be submitted as an appropriate modification for IDEM approval.

Containment System Drainage

Each bay in CSA 2 is sloped (1%) to a five-inch (5") deep blind trench drain dedicated to each individual bay.

Containment System Capacity

Each bay in CSA 2 has a secondary containment volume totaling 350 gallons as demonstrated in calculations provided. A maximum of 3,500 gallons may be stored in each bay at any one time. Under an idealized maximum container arrangement using double stacked 55-gallon containers each bay within CSA-2 will hold 2,860 gallons.
The maximum permitted volume of hazardous waste that may be stored in CSA 2 totals 17,160 gallons.

Control of Run On

Run-on is prevented by conducting all container storage activities at CSA – 2 indoors. CSA-2 is located in a building that is above grade. At one overhead door, the slope of the exterior asphalt pavement at the door is away from the door preventing run-on.

Removal of Liquids

The containment system in CSA 2 consists of individual secondary containment bays that are sloped to a dedicated, five inch (5") deep trench drain collection system that is not provided with a pump or piping. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-3

CONTAINER STORAGE AREA 3
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 3 ("CSA 3"). CSA 3 is located in the Plant #2 Building and is designated for storage of containers with or without free liquids. CSA 3 is eighty (80) feet long by twenty feet (20) wide. The area is divided into five (5) bermed bays. A maximum of 18,260 gallons may be stored in CSA-3. Each bay is fitted with sloped floors and a blind trench, which serves to protect the containers from contact with any spilled liquids. A drawing of CSA 3 is attached.

D-1a Containers With Free Liquids

CSA 3 is located in the Plant #2 Building. CSA 3 is divided into five (5) bays. The volume of wastes that may be stored in each bay follows:

<table>
<thead>
<tr>
<th>Bay Identification</th>
<th>Secondary Containment (Gallons)</th>
<th>Maximum Volume Per Bay Idealized Container Configuration (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA 3-1</td>
<td>460.1</td>
<td>3,850</td>
</tr>
<tr>
<td>CSA 3-2</td>
<td>506.16</td>
<td>4,510</td>
</tr>
<tr>
<td>CSA 3-3</td>
<td>497.49</td>
<td>4,290</td>
</tr>
<tr>
<td>CSA 3-4</td>
<td>313.59</td>
<td>2,970</td>
</tr>
<tr>
<td>CSA 3-5</td>
<td>329.44</td>
<td>2,640</td>
</tr>
</tbody>
</table>

CSA 3 in aggregate may contain a maximum 18,260 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each bay of CSA 3 does not exceed the secondary containment volume specified for the bay.

D-1a(3) Secondary Containment Systems Design and Operation

The above table provides information concerning secondary containment capacity and maximum volume that may be stored in each bay. Calculations showing maximum capacities for CSA-3 are attached.

Requirement for the Base or Liner to Contain Liquids

Each bay is independently constructed and sloped to a separate blind trench to prevent mixing of incompatible wastes. The base and the walls of the secondary containment bays for CSA 3 are six-inch (6") continuous poured, reinforced, monolithic concrete (with Portland Cement) construction. See Appendix CSP-G for MSDS for concrete.

Waterstops are located at the construction joint between the base of the secondary containment and the trench basin of the secondary containment systems for CSA 3. A waterstop retrofit system consisting of a joint sealer that can be visually inspected has been installed in conjunction with the waterstops to prevent liquid migration at the construction joints. Specifications for the waterstops and joint sealers are included in Appendix CSP-G.

The secondary containment floors and walls of CSA 3 are coated with chemically resistant, non-reactive and impermeable coating. Specifications for coatings are included in Appendix CSP-G. The manufacturer's specifications and chemical resistance data for coatings other than the materials specified in Appendix CSP-G must be submitted as an appropriate modification for IDEM approval.

Containment System Drainage

Each bay in CSA 3 is sloped to at least one four-inch (4") deep blind trench drain dedicated to each individual bay.
Containment System Capacity

The capacity of the secondary containment system for each bay in CSA 3 is shown on the above table.

The maximum permitted volume of hazardous waste that may be stored in CSA 3 totals 18,260 gallons.

Control of Run On

CSA-3 is located inside a building with a roof. The slope on the asphalt or concrete pavement at the overhead doors and mandoors is away from the doors, which prevents run-on.

Removal of Liquids

The containment system in CSA 3 consists of individual secondary containment bays that are sloped to at least one dedicated, four inch (4") deep trench drain collection systems that is not provided with a pump or piping. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-4

CONTAINER STORAGE AREA 4
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 4 ("CSA 4"). CSA 4 is located in the Plant #2 Building and is designated for storage of containers with or without free liquids. CSA 4 is eighty (80) feet long by eighteen feet (18) wide. The area is divided into four (4) berm'd bays. A maximum of 17,270 gallons may be stored in CSA-4. Each bay is fitted with sloped floors and a blind trench, which serves to protect the containers from contact with any spilled liquids. A drawing of CSA 4 is attached.

D-1a Containers With Free Liquids

CSA 4 is located in the Plant #2 Building. CSA 4 is divided into four (4) bays. The volume of wastes that may be stored in each bay follows:

<table>
<thead>
<tr>
<th>Bay Identification</th>
<th>Secondary Containment (Gallons)</th>
<th>Maximum Volume Per Bay Idealized Container Configuration (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSA 4-1</td>
<td>621.24</td>
<td>4,290</td>
</tr>
<tr>
<td>CSA 4-2</td>
<td>647.22</td>
<td>4,620</td>
</tr>
<tr>
<td>CSA 4-3</td>
<td>600.32</td>
<td>4,620</td>
</tr>
<tr>
<td>CSA 4-4</td>
<td>432.31</td>
<td>3,740</td>
</tr>
</tbody>
</table>

CSA 4 in aggregate may contain a maximum 17,270 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each bay of CSA 4 does not exceed the secondary containment volume specified for the bay.

D-1a(3) Secondary Containment Systems Design and Operation

The above table provides information concerning secondary containment capacity and maximum volume that may be stored in each bay. Calculations showing maximum capacities for CSA-4 are attached.

Requirement for the Base or Liner to Contain Liquids

Each bay is independently constructed and sloped to a separate blind trench to prevent mixing of incompatible wastes. The base and the walls of the secondary containment bays for CSA 4 are six-inch (6") continuous poured, reinforced, monolithic concrete (with Portland Cement) construction. See Appendix CSP-G for MSDS for concrete.

Waterstops are located at the construction joint between the base of the secondary containment and the trench basin of the secondary containment systems for CSA 4. A waterstop retrofit system consisting of a joint sealer that can be visually inspected has been installed in conjunction with the waterstops to prevent liquid migration at the construction joints. Specifications for the waterstops and joint sealers are included in Appendix CSP-G.

The secondary containment floors and walls of CSA 4 are coated with chemically resistant, non-reactive and impermeable coating. Specifications for various coatings are included in Appendix CSP-G. The manufacturer’s specifications and chemical resistance data for coatings other than the materials specified in Appendix CSP-G must be submitted as an appropriate modification for IDEM approval.

Containment System Drainage

Each bay in CSA 4 is sloped to at least one four-inch (4") deep blind trench drain dedicated to each individual bay.
Containment System Capacity

The capacity of the secondary containment system for each bay in CSA 4 is shown on the above table.

The maximum permitted volume of hazardous waste that may be stored in CSA 4 totals 17,270 gallons.

Control of Run On

CSA-4 is located inside a building with a roof. The slope on the asphalt or concrete pavement at the overhead doors and man doors is in a direction away from the doors, which prevents run-on.

Removal of Liquids

The containment system in CSA 4 consists of individual secondary containment bays that are sloped to at least one dedicated, four inch (4") deep trench drain collection systems that is not provided with a pump or piping. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-5

CONTAINER STORAGE AREA 5
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 5 ("CSA 5"). CSA 5 is located in the Plant #1 Building and is designated for storage of containers with or without free liquids. CSA 5 may store up to 11,400 gallons of hazardous waste with or without free liquids. The dimensions of CSA 5 are thirty feet (30) by thirty-two (32) feet. CSA 5 is located in Plant 1 shown on the site plan in Appendix CSP-B. A detailed drawing CSA 5 is attached.

D-1a Containers With Free Liquids

CSA 5 is located in the Plant #1 Building. CSA 5 in aggregate may store a maximum of 11,400 gallons of hazardous waste. This is derived by using a model of a typical arrangement of modular containment systems. The model uses Ultra-Spill Decks P8 and P4. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed the secondary containment. The volume of waste that may be stored in each device is as follows.

<table>
<thead>
<tr>
<th>Containment Device</th>
<th>Secondary Containment (Gallons)</th>
<th>Maximum Volume Per Bay Idealized Container Configuration (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P4</td>
<td>35</td>
<td>240</td>
</tr>
<tr>
<td>P8</td>
<td>75</td>
<td>680</td>
</tr>
</tbody>
</table>

Modular secondary containment systems are installed in CSA 5 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 5, will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 5 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 5 is modular secondary containment systems. Refer to Appendix CSP-F for description.

Containment System Capacity

The containment system capacity for CSA 5 was determined using a typical arrangement of
modular secondary containment systems. The capacity of the secondary containment system for each device used to calculate the capacity is shown on the above table. The maximum permitted volume of hazardous waste that may be stored in CSA 5 totals 11,400 gallons.

Calculations of the storage capacity for CSA-5 are provided in Appendix CSP-B. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2

Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA – 5 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 5 consists of modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-6

CONTAINER STORAGE AREA 6
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 6 ("CSA 6"). CSA 6 is located in the Plant #1 Building and is designated for storage of containers with or without free liquids. CSA 6 may store up to 7,260 gallons of hazardous waste with or without free liquids as determined by the Paint Filter Liquid Test. The dimensions of CSA 6 are twenty one feet (21) by thirty (30) feet. CSA 6 is located in Plant 1 shown on the site plan in Appendix CSP-B. A detailed drawing CSA 6 is attached.

D-1a Containers With Free Liquids

CSA 6 is located in the Plant #1 Building. CSA 6 in aggregate may store a maximum of 7,260 gallons of hazardous waste. This is derived by using a model of a typical arrangement of modular containment systems. The model uses Ultra-Spill Decks P8, P4, and P2. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed the secondary containment. The volume of waste that may be stored in each device is as follows.

<table>
<thead>
<tr>
<th>Containment Device</th>
<th>Secondary Containment (Gallons)</th>
<th>Maximum Volume Per Bay Idealized Container Configuration (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2</td>
<td>17.5</td>
<td>60</td>
</tr>
<tr>
<td>P4</td>
<td>35</td>
<td>240</td>
</tr>
<tr>
<td>P8</td>
<td>75</td>
<td>680</td>
</tr>
</tbody>
</table>

Modular secondary containment systems are installed in CSA 6 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 6, will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 6 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 6 is modular secondary containment systems. Refer to Appendix CSP-F for description.

D-CSP-A-E6-2
Containment System Capacity

The containment system capacity for CSA 6 was determined using a typical arrangement of modular secondary containment systems. The capacity of the secondary containment system for each device used to calculate the capacity is shown on the above table. The maximum permitted volume of hazardous waste that may be stored in CSA 6 totals 7,260 gallons.

Calculations of the storage capacity for CSA-6 are provided in Appendix CSP-B. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2

Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA – 6 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 6 consists of modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-7

CONTAINER STORAGE AREA 7
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 7 ("CSA 7"). CSA 7 is located in the Plant #1 Building. A maximum of 10,200 gallons of hazardous waste with or without free liquids may be stored in CSA 7 at any one time. CSA 7 is "L" shaped; 3957, square feet.

D-1a Containers With Free Liquids

CSA 7 is located in Plant #1 in the E Tank area of the Processing Building as shown on the site plan in Appendix CSP-B. CSA 7 in aggregate may store a maximum of 10,200 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed 75 gallons. Each modular unit may store a maximum of 680 gallons of hazardous waste with free liquids. Modular secondary containment systems are installed in CSA 7 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 7, will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 7 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 7 is modular secondary containment systems. Refer to Appendix CSP-F for description.

Containment System Capacity

The containment system capacity for CSA 7 was determined using a typical arrangement of modular secondary containment system having a 75 gallon containment capacity. A maximum of 750 gallons of hazardous waste with free liquids may be stored on each modular floor section at any one time. The maximum permitted volume of hazardous waste that may be stored in CSA 7 is 10,200 gallons. Calculations of the storage capacity for CSA 7 are provided in Appendix CSP-B using a typical arrangement with modular secondary containment systems that have a 75 gallon containment capacity. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2.
Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA – 7 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 7 consists of modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 8 ("CSA-8"). CSA-8 is designated for the storage of containers of hazardous waste that do not contain free liquids as determined by the Paint Filter Liquid Test. CSA 8 is about eighty-five (85) feet long by sixty (60) feet wide. CSA-8 is centrally located within the facility as shown on the site plan in Appendix CSP-C. A detailed drawing of CSA-8 is attached.

D-1b Containers Without Free Liquids

The permitted volume for CSA-8 is 72,000 gallons. Calculations of the maximum calculated volume for the containers stored in CSA-8, based on a typical container arrangement, are attached.

D-1b(2) Description of Containers

CSA-8 is constructed outside. This area will normally contain closed bulk bins (e.g., roll off boxes, dump trailers) with steel covers, tarps, or similar devices. Containers that degrade in precipitation (e.g., fiberboard containers) will be elevated on pallets and covered with tarps or similar devices to prevent degradation of the container.

The storage area is designed for storage of ten (10) 35 cubic yard roll-off boxes, or any combination of containers not to exceed 72,000 gallons, with a minimum of 2.5 feet of aisle space between each bulk container or row of non-bulk containers.

D-1b(4) Container Storage Area Drainage

This container storage area does not require secondary containment, but is designed to prevent run-on and run-off. Both are prevented by a combination of curbing and aprons that are at a higher elevation than the surrounding area. Entry/exit to the CSA is from the west side via an apron sloping away from the CSA to prevent run-on. The curbs will be constructed at various heights on the north, south and east sides of CSA-8. A sloped floor with blind sumps will facilitate the removal of stormwater to the facility's stormwater management system after rainfall events.

The majority of the containers stored in CSA-8 will be bulk containers that are constructed with devices that typically elevate the containers above accumulated precipitation. Non-bulk containers or those without legs will be placed in the CSA-8 such that the containers do not contact accumulated precipitation or they are elevated using pallets or similar devices to prevent contact with precipitation.
APPENDIX CSP-A

EXHIBIT-9

CONTAINER STORAGE AREA 11
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 11 ("CSA 11"). CSA 11 is located in the Plant #2 Building and is designated for management and storage of containers with or without free liquids. CSA 11 is approximately thirty-seven (37) feet long by thirty-one (31) feet wide. A drawing of CSA 11 is attached.

D-1a Containers With Free Liquids

A maximum of 12,930 gallons of hazardous waste may be stored in CSA #11. Containers of different sizes may be used as long as the largest single-container with free liquids does not exceed the secondary containment volume specified for the area.

D-1a(3) Secondary Containment Systems Design and Operation

Calculations showing the maximum permitted volume of hazardous waste that may be stored in CSA-11 are attached.

Requirement for the Base or Liner to Contain Liquids

The secondary containment curb for CSA 11 is constructed of poured concrete, 5.5" high by 8" wide. See Appendix CSP-G for MSDS for concrete.

Waterstops are located at the construction joint between the base of the secondary containment curb and the floor. Specifications for the waterstops are included in Appendix CSP-G.

The secondary containment floor is coated with an abrasion, wear and chemically resistant troweled on aggregate filled epoxy followed by an additional layer of a highly chemical resistant epoxy to finish. The aggregate filled epoxy will be troweled over the floor, the construction joint between floor and curb, and the interior and top surfaces of the curb. This coating system is designed, in conjunction with the existing waterstops, to provide a continuous barrier from floor to curb to prevent liquid migration at the construction joints. Specifications for coatings are included in Appendix CSP-G. The manufacturer’s specifications and chemical resistance data for coatings other than the materials specified in Appendix CSP-G must be submitted as an appropriate modification for IDEM approval.

Containment System Drainage

The containment system is not sloped. Containers are elevated on pallets, portable secondary containment devices, rollers or similar structures to protect them from leaks or spills. Portable secondary containment devices, as described in section 2.5.2, and Appendix CSP-F will be used for management of incompatible wastes.

Containment System Capacity

The capacity of the secondary containment system for CSA 11 is 3,196 gallons.

Control of Run On

CSA-11 is located inside a building. The slope on the concrete pavement at the overhead doors is away from the doors, which prevents run-on. CSA 11 is surrounded with a waterstopped curb which prevents run-on from adjacent areas.

Removal of Liquids

CSA 11 has a blind trench. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-10

CONTAINER STORAGE AREA 12
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 12 ("CSA 12"). CSA 12 is located in Plant #2 and is designated for the management and storage and management of containers with or without free liquids as determined by the Paint Filter Liquid Test. CSA 12 is approximately eleven feet (11) by thirty-nine and one-half (39.5) feet. A drawing of CSA-12 is attached.

The following sections provide specific information concerning Container Storage Area 12 ("CSA 12"). CSA 12 is located in the Plant #2 Building and is designated for storage of containers with or without free liquids. CSA 12 may store up to 3,400 gallons of hazardous waste with or without free liquids as determined by the Paint Filter Liquid Test. CSA 12 is approximately eleven feet (11) by thirty-nine and one-half (39.5) feet. The location of CSA 12 is on the site plan in Appendix CSP-C. A detailed drawing CSA 12 is attached.

D-1a Containers With Free Liquids

CSA 12 is located in the Plant #2 Building. CSA 12 in aggregate may store a maximum of 3,400 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed 75 gallons. Each modular unit may store a maximum of 680 gallons of hazardous waste with free liquids. Modular secondary containment systems are installed in CSA 12 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 12, will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 12 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 12 is modular secondary containment systems. Refer to Appendix CSP-F for description.

Containment System Capacity

The containment system capacity for CSA 12 was determined using a typical arrangement of modular secondary containment system having a 75 gallon containment capacity. A maximum of
680 gallons of hazardous waste with free liquids may be stored on each modular floor section at any one time. The maximum permitted volume of hazardous waste that may be stored in CSA 12 is 3,400 gallons. Calculations of the storage capacity for CSA 12 are provided in Appendix CSP-B using a typical arrangement with modular secondary containment systems that have a 75 gallon containment capacity. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2.

Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA – 12 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 12 consists of modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-11

CONTAINER STORAGE AREA 13
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 13 ("CSA 13"). CSA 13 is located in the Plant #1 Building and is designated for storage of containers with or without free liquids. CSA 13 may store up to 2,720 gallons of hazardous waste with or without free liquids as determined by the Paint Filter Liquid Test. The dimensions of CSA 13 are thirty-six (36) by twenty-five (25) feet. CSA 13 is located in Plant 1 shown on the site plan in Appendix CSP-C. A detailed drawing CSA 13 is attached.

D-1a Containers With Free Liquids

CSA 13 is located in the Plant #1 Building. CSA 13 in aggregate may store a maximum of 2,720 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed 75 gallons. Each modular unit may store a maximum of 680 gallons of hazardous waste with free liquids. Modular secondary containment systems are installed in CSA 13 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 13, will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 13 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 13 is modular secondary containment systems. Refer to Appendix CSP-F for description.

Containment System Capacity

The containment system capacity for CSA 13 was determined using a typical arrangement of modular secondary containment system having a 75 gallon containment capacity. A maximum of 680 gallons of hazardous waste with free liquids may be stored on each modular floor section at any one time. The maximum permitted volume of hazardous waste that may be stored in CSA 13 is 2,720 gallons. Calculations of the storage capacity for CSA 13 are provided in Appendix CSP-B using a typical arrangement with modular secondary containment systems that have a 75 gallon containment capacity. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2.
Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA – 13 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 13 consists of modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-12

CONTAINER STORAGE AREA 14
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 14 ("CSA 14"). CSA 14 is located in the Polishing Building and is designated for storage of containers with or without free liquids. CSA 14 may store up to 10,880 gallons of hazardous waste with or without free liquids as determined by the Paint Filter Liquid Test. The dimensions of CSA 14 are fifty-seven (57) by forty-three (43) feet. CSA 14 is located in the Polishing Building shown on the site plan in Appendix CSP-C. A detailed drawing CSA 14 is attached.

D-1a Containers With Free Liquids

CSA 14 is located in the Plant #1 Building. CSA 14 in aggregate may store a maximum of 10,880 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed 75 gallons. Each modular unit may store a maximum of 680 gallons of hazardous waste with free liquids. Modular secondary containment systems are installed in CSA 14 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 14, will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 14 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 14 is modular secondary containment systems. Refer to Appendix CSP-F for description.

Containment System Capacity

The containment system capacity for CSA 14 was determined using a typical arrangement of modular secondary containment system having a 75 gallon containment capacity. A maximum of 680 gallons of hazardous waste with free liquids may be stored on each modular floor section at any one time. The maximum permitted volume of hazardous waste that may be stored in CSA 14 is 10,880 gallons. Calculations of the storage capacity for CSA 14 are provided in Appendix CSP-B using a typical arrangement with modular secondary containment systems that have a 75 gallon containment capacity. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2.
Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA 14 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 14 modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-13

CONTAINER STORAGE AREA 15
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 15 ("CSA 15"). CSA 15 is located in the Solids Handling Building and is designated for storage of containers with or without free liquids. CSA 15 may store up to 5,440 gallons of hazardous waste with or without free liquids as determined by the Paint Filter Liquid Test. The dimensions of CSA 15 are twenty three feet (23) by twenty-one (21) feet. CSA 15 is located in the Solids Handling Building shown on the site plan in Appendix CSP-C. A detailed drawing CSA 15 is attached.

D-1a Containers With Free Liquids

CSA 15 is located in the Solids Handling Building. CSA15 in aggregate may store a maximum of 5,440 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed 75 gallons. Each modular unit may store a maximum of 680 gallons of hazardous waste with free liquids. Modular secondary containment systems are installed in CSA 15 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 15, will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 15 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 15 is modular secondary containment systems. Refer to Appendix CSP-F for description.

Containment System Capacity

The containment system capacity for CSA 15 was determined using a typical arrangement of modular secondary containment system having a 75 gallon containment capacity. A maximum of 680 gallons of hazardous waste with free liquids may be stored on each modular floor section at any one time. The maximum permitted volume of hazardous waste that may be stored in CSA 5 is 5,440 gallons. Calculations of the storage capacity for CSA-15 are provided in Appendix CSP-B using a typical arrangement with modular secondary containment systems that have a 75 gallon containment capacity. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2.
Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA 15 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 15 consists of modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-14

CONTAINER STORAGE AREA 16
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 16 ("CSA 16"). CSA 16 is located in the Plant #3 Building and is designated for storage of containers with or without free liquids. CSA 16 is "L" shaped; 4,526 square feet. The area is divided into four (4) rooms designated as CSA 16-1 through CSA 16-4. Each room contains two (2) bermed bays. Each bay is fitted with roller conveyors, which serve to protect the containers from contact with any spilled liquids. In addition, CSA 16-1, 16-3, and 16-4 can accommodate three (3) modular containment units. A maximum of 32,680 gallons may be stored in CSA 16. CSA 16 has a fifth sub area along the north wall designated as CSA 16-5. CSA 16-5 can accommodate eight (8) modular containment units.

D-1a Containers With Free Liquids

CSA 16 is located in the Plant #3 Building. CSA 16 is divided into four (4) rooms containing two (2) bermed bays each. A maximum of 8,460 gallons of hazardous waste containing free liquids may be stored in each bay of CSA 16. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each bay of CSA 16 does not exceed 846 gallons. Only compatible waste will be stored in each secondary containment structure.

Each modular unit may store a maximum of 680 gallons of hazardous waste with free liquids. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed 75 gallons. Modular secondary containment systems are installed in CSA 16 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

CSA 16 in aggregate may contain a maximum 32,680 gallons of hazardous waste.

D-1a(3) Secondary Containment Systems Design and Operation

The containment volume for each bay in CSA 16 is 846.74 gallons. Based on 40 CFR 264.175(b)(3), the largest container with free liquids, which can be stored in each bay is 846 gallons, although the largest typical IBC is 550 gallons. Each bay of CSA 16 has adequate containment to store 8,467.4 gallons of hazardous waste containing free liquids for a total volume of 67,739.2 gallons. A maximum volume of 8,467.4 gallons per bay. Supporting documentation of the containment volume for CSA 16 is attached. Under an idealized maximum container arrangement using double stacked 55-gallon containers, each bay within CSA 16 will hold 2,640 gallons.

In addition to the constructed containment bays, hazardous waste containers with free liquids can be stored in CSA 16 sitting on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

Each bay is independently constructed and sloped to a separate blind trench to prevent mixing of incompatible wastes. The base and the walls of the secondary containment bays for CSA 16 are
eight-inch (8") continuous poured, reinforced, monolithic concrete construction. See Appendix CSP-G for MSDS for concrete.

Waterstops are located at the construction joint between the base of the secondary containment and the trench basin of the secondary containment systems for CSA 16. A waterstop retrofit system consisting of a joint sealer that can be visually inspected has been installed in conjunction with the waterstops to prevent liquid migration at the construction joints. Specifications for the waterstops and joint sealers are included in Appendix CSP-G.

The secondary containment floors and walls of each individual bay of CSA 16 are coated with chemically resistant, non-reactive and impermeable coating. Specifications for coatings are included in Appendix CSP-G. The manufacturer's specifications and chemical resistance data for chemically resistant coatings other than the materials specified in Appendix CSP-G must be submitted as an appropriate modification for IDEM approval. Floors other than individual bays (e.g. aisles between bays) will not be coated.

The modular secondary containment systems are specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

**Containment System Drainage**

Each bay in CSA 16 is sloped (1%) to an eight-inch (8") deep blind trench drain dedicated to each individual bay. The slope is achieved by continuous poured wedge of reinforced, monolithic concrete sloping from a thickness of six and one-half inch (6.5") at one end to three-inch (3") at the sump end.

Refer to Appendix CSP-F for description a description of the modular containment systems.

**Containment System Capacity**

Each bay in CSA 16 has a secondary containment volume totaling 846.74 gallons as demonstrated in calculations provided. A maximum of 8,460 gallons may be stored in each bay at any one time. Under an idealized maximum container arrangement using double stacked 55-gallon containers each bay within CSA 16 will hold 2,640 gallons.

A 75 gallon containment capacity was used for the modular secondary containment systems. A maximum of 680 gallons of hazardous waste with free liquids may be stored on each modular floor section at any one time. Calculations of the storage capacity for CSA-16 are provided in Appendix CSP-B using a typical arrangement with modular secondary containment systems that have a 75 gallon containment capacity in addition to the maximum volume of the eight bays. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2.

The maximum permitted volume of hazardous waste that may be stored in CSA 16 totals 32,680 gallons.

**Control of Run On**

Run-on is prevented by conducting all container storage activities at CSA 16 indoors. CSA 16 is located in a building that is above grade. At one overhead door, the slope of the exterior asphalt pavement at the door is away from the door preventing run-on.
Removal of Liquids

The containment system in CSA 16 consists of modular secondary containment systems individual and secondary containment bays that are sloped to a dedicated, eight inch (8") deep trench drain collection system that is not provided with a pump or piping. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-15

CONTAINER STORAGE AREA 17
D-1 CONTAINERS
The following sections provide specific information concerning Container Storage Area 17 ("CSA 17"). CSA 17 is located in the Plant #3 Building and is designated for storage of containers with or without free liquids. CSA 17 is "L" shaped; 11,968 square feet. The area is divided into thirty (30) bermed bays each. A maximum of 145,200 gallons may be stored in CSA 17. Each bay is fitted with roller conveyors, which serve to protect the containers from contact with any spilled liquids.

D-1a Containers With Free Liquids
CSA 17 is located in the Plant #3 Building. CSA 17 is divided into thirty (30) bermed bays. A maximum of 11,530 gallons of hazardous waste containing free liquids may be stored in each bay of CSA 17. CSA 17 in aggregate may contain a maximum 145,200 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each bay of CSA 17 does not exceed 1,153 gallons.

D-1a(3) Secondary Containment Systems Design and Operation
The containment volume for each bay in CSA 17 is 1,153.27 gallons. Based on 40 CFR 264.175(b)(3), the largest container with free liquids, which can be stored in each bay is 1,153 gallons, although the largest typical IBC is 550 gallons.. Each bay of CSA 17 has adequate containment to store 11,530 gallons of hazardous waste containing free liquids for a total volume of 345,900 gallons. A maximum volume of 11,530 gallons per bay. Supporting documentation of the containment volume for CSA 17 is attached. Under an idealized maximum container arrangement using double stacked 55-gallon containers, each bay within CSA 17 will hold 4,840 gallons.

Requirement for the Base or Liner to Contain Liquids
Each bay is independently constructed and sloped to a separate blind trench to prevent mixing of incompatible wastes. The base and the walls of the secondary containment bays for CSA 17 are eight-inch (8") continuous poured, reinforced, monolithic concrete construction. See Appendix CSP-G for MSDS for concrete.

Waterstops are located at the construction joint between the base of the secondary containment and the trench basin of the secondary containment systems for CSA 17. A waterstop retrofit system consisting of a joint sealer that can be visually inspected has been installed in conjunction with the waterstops to prevent liquid migration at the construction joints. Specifications for the waterstops and joint sealers are included in Appendix CSP-G.

The secondary containment floors and walls of each individual bay of CSA 17 are coated with chemically resistant, non-reactive and impermeable coating. Specifications for coatings are included in Appendix CSP-G. The manufacturer's specifications and chemical resistance data for chemically resistant coatings other than the materials specified in Appendix CSP-G must be submitted as an appropriate modification for IDEM approval. Floors other than individual bays (e.g. aislies between bays) will not be coated.

Containment System Drainage
Each bay in CSA 17 is sloped (1%) to an eight-inch (8") deep blind trench drain dedicated to each individual bay. The slope is achieved by continuous poured wedge of reinforced, monolithic concrete sloping from a thickness of eight-inch (8") at one end to three-inch (3") at the sump end.
Containment System Capacity

Each bay in CSA 17 has a secondary containment volume totaling 1,153 gallons as demonstrated in calculations provided. A maximum of 11,530 gallons may be stored in each bay at any one time. Under an idealized maximum container arrangement using double stacked 55-gallon containers each bay within CSA 16 will hold 4,840 gallons.

The maximum permitted volume of hazardous waste that may be stored in CSA 17 totals 145,200 gallons.

Control of Run On

Run-on is prevented by conducting all container storage activities at CSA 17 indoors. CSA 17 is located in a building that is above grade. At one overhead door, the slope of the exterior asphalt pavement at the door is away from the door preventing run-on. All other overhead doors are above grade.

Removal of Liquids

The containment system in CSA 17 consists of individual secondary containment bays that are sloped to a dedicated, eight inch (8") deep trench drain collection system that is not provided with a pump or piping. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-16

CONTAINER STORAGE AREA 18
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 18 ("CSA 18"). CSA 18 is located in the Plant #3 Building and is designated for storage of containers with or without free liquids. CSA 18 is "L" shaped; 8,501 square feet. A maximum of 33,320 gallons may be stored in CSA 18.

D-1a Containers With Free Liquids

CSA 18 is located in Plant #3. CSA 18 in aggregate may store a maximum of 33,320 gallons of hazardous waste. Containers of different sizes may be used as long as the largest single-container with free liquids stored in each modular containment unit does not exceed 75 gallons. Each modular unit may store a maximum of 680 gallons of hazardous waste with free liquids. Modular secondary containment systems are installed in CSA 18 for storage of hazardous waste with free liquids. Only compatible waste will be stored on any individual modular secondary containment structure.

D-1a(3) Secondary Containment Systems Design and Operation

The hazardous waste containers with free liquids, when stored in CSA 18 will sit on modular containment systems designed to collect any releases and to protect the containers from contact with any spilled liquids. Containers that do not contain free liquids, do not need to be placed on modular containment systems.

The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Requirement for the Base or Liner to Contain Liquids

CSA 18 consists of modular secondary containment systems specifically designed to provide secondary containment for containers with free liquids. The modular secondary containment systems are founded on concrete. The modular containment units are constructed of appropriate materials. Refer to Appendix CSP-F for compatibility charts, performance standards, and vendor literature for specifications for modular secondary containment systems and materials of construction.

Containment System Drainage

The secondary containment in CSA 18 is modular secondary containment systems. Refer to Appendix CSP-F for description.

Containment System Capacity

The containment system capacity for CSA 18 was determined using a typical arrangement of modular secondary containment system having a 75 gallon containment capacity. A maximum of 750 gallons of hazardous waste with free liquids may be stored on each modular floor section at any one time. The maximum permitted volume of hazardous waste that may be stored in CSA 18 is 33,320 gallons. Calculations of the storage capacity for CSA 18 are provided in Appendix CSP-B using a typical arrangement with modular secondary containment systems that have a 75 gallon containment capacity. When portable secondary containment devices are used, Heritage will follow the operating procedures in Section 2.5.2.
Control of Run-On

Run-on is prevented by conducting all container storage activities at CSA – 18 indoors. At the overhead door, there is a curb and outside the door, the grade of the asphalt pavement is away from the door. These features prevent run-on.

Removal of Liquids

The containment system in CSA 18 consists of modular secondary containment systems designed to accumulate liquids. Removal of liquids will be accomplished as described in Section 2.7.
APPENDIX CSP-A

EXHIBIT-17

CONTAINER STORAGE AREA 19
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 19 ("CSA 19"). CSA 19 is designated for the storage of containers of hazardous waste that do not contain free liquids as determined by the Paint Filter Liquid Test. CSA 19 is about sixty-six (66) feet long by thirty-two (32) feet wide. CSA 19 is located on the north side of Plant #3 as shown on the site plan in Appendix CSP-C. A detailed drawing of CSA 19 is attached.

D-1b Containers Without Free Liquids

The permitted volume for CSA 19 is 32,640 gallons. Calculations of the maximum calculated volume for the containers stored in CSA 19, based on a typical container arrangement, are attached.

D-1b(2) Description of Containers

CSA 19 is constructed outside. This area will normally contain closed bulk bins (e.g., roll off boxes, dump trailers) with steel covers, tarps, or similar devices. Containers that degrade in precipitation (e.g., fiberboard containers) will be elevated on pallets and covered with tarps or similar devices to prevent degradation of the container.

The storage area is designed for storage of two (2) 80.8 cubic yard dump trailers, or any combination of containers not to exceed 32,640 gallons, with a minimum of 2.5 feet of aisle space between each bulk container or row of non-bulk containers.

D-1b(4) Container Storage Area Drainage

This container storage area does not require secondary containment, but is designed to prevent run-on and run-off. Both are prevented by a combination of curbing and aprons that are at a higher elevation that the surrounding area. Entry/exit to the CSA is from the east side via an apron sloping away from the CSA to prevent run-on. The area will have wing walls on the north and south joining the foundation east wall of Plant#3. A sloped floor with blind sumps will facilitate the removal of stormwater to the facility’s stormwater management system after rainfall events.

The majority of the containers stored in CSA 19 will be bulk containers that are constructed with devices that typically elevate the containers above accumulated precipitation. Non-bulk containers or those without legs will be placed in the CSA 19 such that the containers do not contact accumulated precipitation or they are elevated using pallets or similar devices to prevent contact with precipitation.
APPENDIX CSP-A

EXHIBIT-18

CONTAINER STORAGE AREA 20
D-1 CONTAINERS

The following sections provide specific information concerning Container Storage Area 20 ("CSA 20"). CSA 20 is designated for the storage of containers of hazardous waste that do not contain free liquids as determined by the Paint Filter Liquid Test. CSA 20 is about one hundreded one-hundred eight and one-half (108.5) feet long by seventy-six (76) feet wide. CSA 20 is located on the north side of Plant#3 as shown on the site plan in Appendix CSP-C. A detailed drawing of CSA 20 is attached.

D-1b Containers Without Free Liquids

The permitted volume for CSA 20 is 130,560 gallons. Calculations of the maximum calculated volume for the containers stored in CSA 20, based on a typical container arrangement, are attached.

D-1b(2) Description of Containers

CSA 19 is constructed outside. This area will normally contain closed bulk bins (e.g., roll off boxes, dump trailers) with steel covers, tarps, or similar devices. Containers that degrade in precipitation (e.g., fiberboard containers) will be elevated on pallets and covered with tarps or similar devices to prevent degradation of the container.

The storage area is designed for storage of eight (8) 80.8 cubic yard dump trailers, or any combination of containers not to exceed 130,560 gallons, with a minimum of 2.5 feet of aisle space between each bulk container or row of non-bulk containers.

D-1b(4) Container Storage Area Drainage

This container storage area does not require secondary containment, but is designed to prevent run-on and run-off. Both are prevented by a combination of curbing and aprons that are at a higher elevation that the surrounding area. Entry/exit to the CSA is from the east side via an apron sloping away from the CSA to prevent run-on. The area will have wing walls on the north and south jointing the foundation east wall of Plant#3. A sloped floor with blind sumps will facilitate the removal of stormwater to the facility’s stormwater management system after rainfall events.

The majority of the containers stored in CSA 20 will be bulk containers that are constructed with devices that typically elevate the containers above accumulated precipitation. Non-bulk containers or those without legs will be placed in the CSA 20 such that the containers do not contact accumulated precipitation or they are elevated using pallets or similar devices to prevent contact with precipitation.
APPENDIX CSP-B

CONTAINER STORAGE AREA DRAWINGS,
CONTAINER CAPACITY CALCULATIONS, AND
SECONDARY CONTAINMENT CALCULATIONS
APPENDIX CSP-B

EXHIBIT-1

CONTAINER STORAGE AREA 1
CONTAINER STORAGE AREA 1

DRAWINGS
CONTAINER STORAGE AREA 1

VOLUME CALCULATIONS
CALCULATE VOLUME OF CONTAINMENT BOX IN AREA 1 E 2

- Dimensions of typical containment box measured on June 28, 1994
  PER DRAWING NUMBER Z8212

\[ V_{\text{TOTAL}} = V_1 + V_2 + V_3 \]

WHERE

\[ V_1 = L \times W \times H \quad \text{(in feet)} \]
\[ = \frac{5}{12} \times 53.75 \times \frac{13}{12} \]
\[ = 0.4166 \times 4.479 \times 1.0833 \]
\[ = 2.02 \text{ ft}^3 \]

\[ V_2 = \frac{1}{2} (L \times W \times H) + \left[ L \times W \times H \right] \quad \text{ASSUMES CONTINUOUS SLOPE} \]
\[ = \left[ 0.5 \left( \frac{25}{12} \times 53.75 \times 4.5 \right) \right] + \left[ \frac{25}{12} \times 53.75 \times 3.5 \right] \]
\[ = \left[ 0.5 \left( 25.083 \times 53.75 \times 4.79 \right) \right] + \left[ 25.083 \times 4.979 \times 0.2917 \right] \]
\[ = 21.045 + 32.771 \]
\[ = 53.816 \text{ ft}^3 \]

\[ V_3 = \frac{1}{2} (L \times W \times H) \]
\[ = 0.5 \left( 48 \times 53.75 \times 3.5 \right) \]
\[ = 0.5 \left( 4.00 \times 4.479 \times 0.2917 \right) \]
\[ = 2.613 \text{ ft}^3 \]
CONTINUED FROM P. 1 OF

\[ V_{\text{TOTAL}} = V_1 + V_2 + V_3 \]
\[ = 2.02 + 53.836 + 2.613 \]
\[ = 58.469 \text{ ft}^3 \]
\[ V_{\text{TOTAL}} = 437.35 \text{ gallons} \]

**CALCULATE DISPLACEMENT OF ROLLER CONVEYOR SYSTEM**

- **DIMENSIONS AND CONFIGURATION OF ROLLER CONVEYOR SHOWN ON DRAWING NUMBER 2B21ZW99**

- **CONSISTANTLY ASSUME THAT ALL ROLLERS ARE FLUSH WITH FLOOR ADJACENT TO BAYS & ACCOUNTING FOR MOST DISPLACEMENT IN THE BAY**

- **THE CHECKERED STEEL PLATE IS CONSTRUCTED ABOVE THE GRADE OF THE BAY. NO VOLUME FOR CONTAINMENT IS LOST**

- **"C" CHANNELS ARE INSTALLED BELOW FLOOR GRADE ON BOTH SIDES OF EACH BAY TO SUPPORT ROLLER SYSTEM**

\[ V_{\text{TOTAL ROLLER CONVEYOR}} = V_{\text{ROLLERS}} + V_{\text{C-CHANNELS}} \]

**WHERE:**

\[ V_{\text{ROLLERS}} = (\pi r^2 h) \times \text{Number of Rollers} \]
Volume of Boys | Areas 1 & 2 - Rollers | Job #28212 | 5/9/96

Sheet 3 of 4

\[ V_{\text{rollers}} = \pi (1.25')^2 (25') (152 \text{ rollers}) \left( \frac{1 \text{ ft}^3}{1728 \text{ in}^3} \right) \]

\[ = 10.7947 \text{ ft}^3 \]

\[ V_{\text{channels}} = L \times (\text{cross-sectional area}) \times (2) + L \times (\text{cross-sectional area}_2) \]

\[ = (306') (4.675 \text{ in}^2) (2) + (306') (1.5625 \text{ in}^2) \]

\[ = 1503.23 \text{ in}^3 \left( \frac{1 \text{ ft}^3}{1728 \text{ in}^3} \right) \]

\[ = 0.870 \text{ ft}^3 \]

Total roller conveyor = \( V_{\text{rollers}} + V_{\text{channels}} \)

\[ = 10.7947 \text{ ft}^3 + 0.870 \text{ ft}^3 \]

\[ = 11.665 \text{ ft}^3 \]

*Note: A third C-channel does not exist. The center strip of steel shown on the plan view of drawing 28212439 is used to connect the rollers, and cannot be considered a C-channel.*
Calculate volume of secondary containment available

\[ V_{\text{secondary containment}} = V_{\text{total}} - V_{\text{occupied}} \]
\[ = 58,469.5 \text{ ft}^3 - 11,665 \text{ ft}^3 \]
\[ = 46,804 \text{ ft}^3 (7.48 \text{ gal/ft}^3) \]
\[ = 350,009 \text{ gallons} \]

With 350,009 gallons of secondary containment available per bay, the volume of container storage per bay with roller conveyor is 3500.9 gallons.
APPENDIX CSP-B

EXHIBIT-2

CONTAINER STORAGE AREA 2
CONTAINER STORAGE AREA 2

DRAWINGS
CONTAINER STORAGE AREA 2

VOLUME CALCULATIONS
CALCULATE VOLUME OF CONTAMINATION BAY IN AREA 1 & 2

DIMENSIONS OF TYPICAL CONTAMINATION BAY MEASURED ON JUNE 28, 1994
PER DRAWING NUMBER ZB212

\[ V_{\text{TOTAL}} = V_1 + V_2 + V_3 \]

WHERE

\[ V_1 = L \times W \times H \text{ (in feet)} \]
\[ = \frac{5}{12} \times 53.75 \times \frac{13}{12} \]
\[ = 0.4166 \times 4.479 \times 1.0833 \]
\[ = 2.02 \text{ ft}^3 \]

\[ V_2 = \left[ \frac{1}{2} (L \times W \times H) \right] + \left[ (L \times W \times H) \right] \]
\[ \text{ASSUMES CONTINUOUS SLOPE} \]
\[ = \left[ 0.5 \left( 25'1'' \times 53.75'' \times 4.5'' \right) \right] + \left[ 25'1'' \times 53.75'' \times 3.5'' \right] \]
\[ = \left[ 0.5 \left( 25.083 \times 4.479 \times 0.375 \right) \right] + \left[ 25.083 \times 4.479 \times 0.2917 \right] \]
\[ = 21.045 + 32.771 \]
\[ = 53.836 \text{ ft}^3 \]

\[ V_3 = \frac{1}{2} (L \times W \times H) \]
\[ = 0.5 \left( 48 \times 53.75 \times 3.5 \right) \]
\[ = 0.5 \left( 400 \times 4.479 \times 0.2917 \right) \]
\[ = 26.13 \text{ ft}^3 \]
CONTINUED FROM P. 1. OF

\[ V_{\text{TOTAL}} = V_1 + V_2 + V_3 \]
\[ = 2.02 + 53.336 + 2.613 \]
\[ = 58.469 \text{ ft}^3 \]
\[ V_{\text{TOTAL}} = 437.35 \text{ gallons} \]

**CALCULATE DISPLACEMENT OF ROLLER CONVEYOR SYSTEM**

- Dimensions and configuration of roller conveyor shown on drawing number 28212-V09

- Conservatively assume that all rollers are flush with floor adjacent to rails; accounting for most displacement in the bay

- The checkered steel plate is constructed above the grade of the bay; no volume for containment is lost

- C channels are installed below floor grade on both sides of each bay to support roller system

\[ V_{\text{TOTAL ROLLER CONVEYOR}} = V_{\text{ROLLERS}} + V_{\text{C CHANNELS}} \]

**WHERE:**

\[ V_{\text{ROLLERS}} = \left(\pi \ r^2 \ h\right) \times \text{Number of Rollers} \]
Volume of Bays | Areas 1 & 2 - Rollers | Job #28213 5/19/96

Sheet 3 of 4

\[
V_{\text{rollers}} = \pi \left(1.25\right)^2 \left(25\right) \left(152 \text{ rollers} \right) \left(\frac{1 \text{ ft}^3}{1728 \text{ in}^3}\right)
\]
\[
= 10.7947 \text{ ft}^3
\]

\[
V_{\text{channels}} = L \times \left(\text{cross-sectional area}\right) \times (2) + L \left(\text{cross-sectional area}\right)
\]
\[
= (306) \left(1.675 \text{ in}^2\right) \times (2) + (306) \left(1.5625 \text{ in}^2\right)
\]
\[
= 1503.23 \text{ in}^3 \left(\frac{1 \text{ ft}^3}{1728 \text{ in}^3}\right)
\]
\[
= 0.870 \text{ ft}^3
\]

Total roller conveyor = \[V_{\text{rollers}} + V_{\text{channels}}\]
\[
= 10.7947 \text{ ft}^3 + 0.870 \text{ ft}^3
\]
\[
= 11.665 \text{ ft}^3
\]

*Note: A third C-channel does not exist. The center strip of steel shown on the plan view of drawing 28212U39 is used to connect the rollers, and cannot be considered a C-channel.
Calculate Volume of Secondary Containment Available

\[ V_{\text{secondary containment}} = V_{\text{total}} - V_{\text{occupied}} \]
\[ = 58,469 \text{ ft}^3 - 11,665 \text{ ft}^3 \]
\[ = 46,804 \text{ ft}^3 \left(\frac{7.48 \text{ gal}}{\text{ft}^3}\right) \]
\[ = 350,099 \text{ gallons} \]

With 350,099 gallons of secondary containment available per bay, the volume of container storage per bay with roller conveyor is 3500.9 gallons.
APPENDIX CSP- B

EXHIBIT-3

CONTAINER STORAGE AREA 3
CONTAINER STORAGE AREA 3

DRAWINGS
CONTAINER STORAGE AREA 3

VOLUME CALCULATIONS
### DETERMINATION OF MAXIMUM CAPACITY AND SECONDARY CONTAINMENT VOLUME

#### CSA -3

<table>
<thead>
<tr>
<th>Bay</th>
<th>Gross Computed Containment Volume (1)</th>
<th>Number of Containers Single Stack(2)</th>
<th>Number of Containers Double Stack</th>
<th>Maximum Container Volume (Gallons) (3)</th>
<th>Displacement by Containers(4)</th>
<th>Miscellaneous Displacement in Bay(5)</th>
<th>Net Containment Volume (Gallons) (6)</th>
<th>Volume Available for Secondary Containment (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay 3-1</td>
<td>871</td>
<td>35</td>
<td>70</td>
<td>3,850</td>
<td>410.9</td>
<td>0.00</td>
<td>460.1</td>
<td>4,601.0</td>
</tr>
<tr>
<td>Bay3-2</td>
<td>987.5</td>
<td>41</td>
<td>82</td>
<td>4,510</td>
<td>481.34</td>
<td>0.00</td>
<td>506.16</td>
<td>5,061.5</td>
</tr>
<tr>
<td>Bay 3-3</td>
<td>985.3</td>
<td>39</td>
<td>78</td>
<td>4,290</td>
<td>457.86</td>
<td>29.95</td>
<td>497.49</td>
<td>4,974.9</td>
</tr>
<tr>
<td>Bay 3-4</td>
<td>639.1</td>
<td>27</td>
<td>54</td>
<td>2,970</td>
<td>316.98</td>
<td>8.53</td>
<td>313.59</td>
<td>3,135.9</td>
</tr>
<tr>
<td>Bay3-5</td>
<td>611.2</td>
<td>24</td>
<td>48</td>
<td>2,640</td>
<td>281.76</td>
<td>0.00</td>
<td>329.44</td>
<td>3,294.4</td>
</tr>
</tbody>
</table>

(1) **GROSS COMPUTED CONTAINMENT VOLUME**
Volume calculations performed from 205 survey points using AutoCad land development desktop are accomplished by creating three-dimensional surfaces based upon as-built survey data. A mathematical model is created from triangles defined by the survey points in which the elevation of the model can be determined at any X-Y coordinate. When volumes are calculated, the Z coordinate (elevation) is determined at a grid spacing specified by the user, in this case 1 foot X 1 foot. The elevation is determined for both surfaces, (e.g. the floor surface and the top of curb surface). The difference at each grid point is determined, and this difference is multiplied by the X grid spacing and the Y grid spacing (if 1 ft X 1 ft.) to result in a volume for that X-Y grid. All of the individual X-Y grid volumes are summed within the software to provide the total calculated volume. gross computed volume does not include blind trenches which are ignored for

(2) **NUMBER OF CONTAINERS**
Container arrangement based on 55-gallon containers to determine displacement. Any type, number, or configuration of containers may be present as long as aisle space is nominally 2.5 feet and container stacking conforms with permit requirement's. Idealized container arrangement used is provided on drawing A1628058PRA05-7

(3) **MAXIMUM CONTAINER VOLUME**
Maximum volume based on container arrangement for 55 gallon containers double stacked.

(4) **DISPLACEMENT BY CONTAINERS**
Displacement by a container is determined using a 55 gallon container. The displacement of one container in CSA-3 is calculated as follows using 6 inches (which is more conservative) to account for volume below the curb even though curb height is 5 inches to account for slope within the unit:

\[ V_{\text{container}} = \pi r^2 h \]

Where:
- \( \pi \) = the ratio of a circle's circumference to its diameter
- \( r \) = radius of a circle in feet which is 1 foot for a 55 gallon container
S = height of the cylinder in feet is assumed 6 inches or 0.5 feet to account for slope on floor within unit.

\[
V_{\text{Container}} = 3.1416 \times 1^2 \times (0.5) \\
= 1.57 \text{ ft}^3 \\
= 1.57 \text{ ft}^3 \times 7.48 \text{ gallons/ft}^3 \\
= 11.74 \text{ gallons}
\]

(5) MISCELLANEOUS DISPLACEMENT

SEVERAL PIECES OF EQUIPMENT ARE PRESENT IN BAYS OF CSA-3 THAT IMPACT SECONDARY CONTAINMENT. OTHER EQUIPMENT IS PRESENT IN CSA-3, BUT IT IS ON LEGS ABOVE THE CONTAINMENT STRUCTURE OR THE REDUCTION DUE TO DISPLACEMENT IS ZERO OR NEGLIGIBLE (E.G., EYE WASH STATIONS, SHELVING, CARTS, ETC.).

Bay 3-3

\[
V_{\text{Compactor}} = L \times WXH \text{ in feet}
\]

Where:

\[
\begin{align*}
L & = 2.67 \text{ feet} \\
W & = 2.83 \text{ feet} \\
H & = 0.5 \text{ feet (6 inches)}
\end{align*}
\]

\[
V_{\text{Compactor}} = 2.83 \times 2.83 \times 0.5 \\
= 4.00 \text{ ft}^3 \\
= 4.00 \text{ ft}^3 \times 7.48 \text{ gallons/ft}^3 \\
= 29.95 \text{ gallons}
\]

Bay 3-4

\[
V_{\text{Condensing Device}} = L \times W \times H \text{ in feet}
\]

Where:

\[
\begin{align*}
L & = 1.83 \text{ feet} \\
W & = 1.25 \text{ feet} \\
H & = 0.5 \text{ feet (6 inches)}
\end{align*}
\]

\[
V_{\text{Condensing Device}} = 1.83 \times 1.25 \times 0.5 \\
= 1.14 \text{ ft}^3 \\
= 1.14 \text{ ft}^3 \times 7.48 \text{ gallons/ft}^3 \\
= 8.53 \text{ gallons}
\]

(6) NET CONTAINMENT VOLUME

THE NET CONTAINMENT VOLUME IS DETERMINED BY SUBTRACTING THE DISPLACEMENT OF THE CONTAINERS AND THE MISCELLANEOUS DISPLACEMENT FROM THE GROSS COMPUTED CONTAINMENT VOLUME. THE CONTAINMENT VOLUME THE LARGEST SINGLE CONTAINER THAT MAY BE STORED IN GALLONS AND IS GREATER THAN THE MAXIMUM VOLUME OF MATERIALS BASED ON AN IDEALIZED CONTAINER ARRANGEMENT IN EACH BAY WITH THE SECONDARY CONTAINMENT CAPACITY MUCH GREATER 10% OF THE MAXIMUM VOLUME.
APPENDIX CSP-B

EXHIBIT-4

CONTAINER STORAGE AREA 4
CONTAINER STORAGE AREA 4

DRAWINGS
CONTAINER STORAGE AREA 4

VOLUME CALCULATIONS
### DETERMINATION OF MAXIMUM CAPACITY AND SECONDARY CONTAINMENT VOLUME

**CSA-4**

<table>
<thead>
<tr>
<th>Bay</th>
<th>Gross Computed Containment Volume (Gals)</th>
<th>Number of Containers Single Stack</th>
<th>Number of Containers Double Stack</th>
<th>Maximum Container Volume (Gallons)</th>
<th>Displacement by Containers</th>
<th>Miscellaneous Displacement in Bay</th>
<th>Net Containment Volume (Gallons)</th>
<th>Volume Available for Secondary Containment (Gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bay 4-1</td>
<td>1079.1</td>
<td>39</td>
<td>78</td>
<td>4290</td>
<td>457.86</td>
<td>0.00</td>
<td>621.24</td>
<td>6,212.4</td>
</tr>
<tr>
<td>Bay 4-2</td>
<td>1140.3</td>
<td>42</td>
<td>84</td>
<td>4620</td>
<td>493.08</td>
<td>0.00</td>
<td>647.22</td>
<td>6,472.2</td>
</tr>
<tr>
<td>Bay 4-3</td>
<td>1093.4</td>
<td>42</td>
<td>84</td>
<td>4620</td>
<td>493.08</td>
<td>0.00</td>
<td>600.32</td>
<td>6,003.2</td>
</tr>
<tr>
<td>Bay 4-4</td>
<td>1176.6</td>
<td>34</td>
<td>68</td>
<td>3740</td>
<td>399.16</td>
<td>345.13</td>
<td>432.31</td>
<td>4,322.1</td>
</tr>
</tbody>
</table>

1. **GROSS COMPUTED CONTAINMENT VOLUME**
   Volume calculations performed from 205 survey points using AutoCAD land development desktop are accomplished by creating three-dimensional surfaces based upon as-built survey data. A mathematical model is created from triangles defined by the survey points in which the elevation of the model can be determined at any X-Y coordinate. When volumes are calculated, the Z coordinate (elevation) is determined at a grid spacing specified by the user, in this case 1 foot X 1 foot. The elevation is determined for both surfaces, (e.g. the floor surface and the top of curb surface), the difference at each grid point is determined, and this difference is multiplied by the X grid spacing and the Y grid spacing (if 1 pt X 1 ft.) to result in a volume for that X-Y grid. All of the individual X-Y grid volumes are summed within the software to provide the total calculated volume. Gross computed volume does not include blind trenches which are ignored for...

2. **NUMBER OF CONTAINERS**
   Container arrangement based on 55-gallon containers to determine displacement. Any type, number, or configuration of containers may be present as long as aisle space is nominally 2.5 feet and container stacking conforms with permit requirements. Idealized container arrangement used is provided on drawing A1529058PRA05-7.

3. **MAXIMUM CONTAINER VOLUME**
   Maximum volume based on container arrangement for 55 gallon containers double stacked.

4. **DISPLACEMENT BY CONTAINERS**
   Displacement by a container is determined using a 55 gallon container. The displacement of one container in CSA-3 is calculated as follows using 6 inches (which is more conservative) to account for volume below the curb even though curb height is 5 inches to account for slope within the unit: 
   \[ V_{\text{container}} = \pi \cdot r^2 \cdot h \]
   Where:
   - \( \pi \) = the ratio of a circle's circumference to its diameter
   - \( r \) = radius of a circle in feet which is 1 foot for a 55 gallon container
   - \( S \) = height of the cylinder in feet is assumed 6 inches or 0.5 feet to account for slope on floor within unit.
\[ V_{\text{Container}} = 3.1416 \times 1^2 \times (0.5) \]
\[ = 1.57 \text{ ft}^3 \]
\[ = 1.57 \text{ ft}^3 \times 7.48 \text{ gallons/ft}^3 \]
\[ = 11.74 \text{ gallons} \]

\( (5) \) MISCELLANEOUS DISPLACEMENT
SEVERAL PIECES OF EQUIPMENT ARE PRESENT IN BAYS OF CSA-3 THAT IMPACT SECONDARY CONTAINMENT. OTHER EQUIPMENT IS PRESENT IN CSA-3, BUT IT IS ON LEGS ABOVE THE CONTAINMENT STRUCTURE OR THE REDUCTION DUE TO DISPLACEMENT IS ZERO OR NEGLIGIBLE (E.G., EYE WASH STATIONS, SHELVING, CARTS, ETC.).

**Bay 4-4**

\[ V_{\text{U shaped Work Area and Deck}} = \text{Length} \times \text{Width} \times \text{Height in feet} \]

Where:

- \( L = 5.33 \text{ feet}, 8 \text{ feet}, \) and 11 feet in 3 segments
- \( W = 2.5 \text{ feet (30 inches)} \)
- \( H = 0.5 \text{ feet (6 inches)} \)

\[ V_{\text{U shaped Work Area and Deck}} = (5.33 + 8 + 11) \times 2.5 \times 0.5 \]
\[ = 30.41 \text{ ft}^3 \]
\[ = 30.41 \text{ ft}^3 \times 7.48 \text{ gallons/ft}^3 \]
\[ = 227.49 \text{ gallons} \]

**Bay 3-4**

\[ V_{\text{Hoods/Cabinets}} = L \times W \times H \text{ in feet with 3 cabinets/hoods} \]

Where:

- \( L_1 = 8 \text{ feet} \)
- \( W_1 = 2.59 \text{ feet} \)
- \( L_2 = 4 \text{ feet} \)
- \( W_2 = 1.55 \text{ feet} \)
- \( L_3 = 2.92 \text{ feet} \)
- \( W_3 = 1.59 \text{ feet} \)
- \( H = 0.5 \text{ feet (6 inches)} \)

\[ V_{\text{Condensing Device}} = \left( (8 \times 2.59) + (4 \times 1.55) + (2.92 \times 1.59) \right) \times 0.5 \]
\[ = 15.78 \text{ ft}^3 \]
\[ = 15.78 \text{ ft}^3 \times 7.48 \text{ gallons/ft}^3 \]
\[ = 118.03 \text{ gallons} \]

\( (6) \) NET CONTAINMENT VOLUME
THE NET CONTAINMENT VOLUME IS DETERMINED BY SUBTRACTING THE DISPLACEMENT OF THE CONTAINERS AND THE MISCELLANEOUS DISPLACEMENT FROM THE GROSS COMPUTED CONTAINMENT VOLUME. THE CONTAINMENT VOLUME THE LARGEST SINGLE CONTAINER THAT MAY BE STORED IN GALLONS AND IS GREATER THAN THE MAXIMUM VOLUME OF MATERIALS BASED ON AN IDEALIZED CONTAINER ARRANGEMENT IN EACH BAY WITH THE SECONDARY CONTAINMENT CAPACITY MUCH GREATER 10\% OF THE MAXIMUM VOLUME.
APPENDIX CSP-B

EXHIBIT-5

CONTAINER STORAGE AREA 5
CONTAINER STORAGE AREA 5

DRAWING
CONTAINER STORAGE AREA 5

CALCULATION OF MAXIMUM VOLUME AND SECONDARY CONTAINMENT
**DETERMINATION OF MAXIMUM CAPACITY FOR CSA-5**

**Calculation Basis**

1. 40 CFR 264.175(c)
   a. Containment Capacity ≥ 10% of total free liquid volume
   b. Containment Capacity ≥ volume of largest container
2. CSA Dimension 32' x 30'
3. Ultra-Spill Deck modular containment systems
4. Aisle spacing of 2 ½ feet either side of unit for inspection

**Calculation**

Max volume for CSA 5 = 11,400 gallons

<table>
<thead>
<tr>
<th>Modular Containment Device</th>
<th>Containment Volume (gallons)</th>
<th>Dimensions (Inches)</th>
<th>Device Max Volume</th>
<th>Number of Devices</th>
<th>Total Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra-Spill Deck P8</td>
<td>75</td>
<td>98.5x50x5.25</td>
<td>680</td>
<td>15</td>
<td>10,200</td>
</tr>
<tr>
<td>Ultra-Spill Deck P4</td>
<td>35</td>
<td>52x52x5.75</td>
<td>240</td>
<td>5</td>
<td>1,200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total Volume CSA 5</td>
</tr>
</tbody>
</table>

Devive Max Volumes based on:

P8 device having eight (8) 30 gallon containers individually stacked on eight (8) 55 gallon containers: (8 x 30 gallon) + (8 x 55 gallon) = 680 gallons

P4 device having four (4) 30 gallon containers individually stacked on four(4) 30 gallon containers: (4 x 30 gallon) + (4 x 30 gallon) = 240 gallons
APPENDIX CSP- B

EXHIBIT-6

CONTAINER STORAGE AREA 6
CONTAINER STORAGE AREA 6

DRAWING
CONTAINER STORAGE AREA 6

CALCULATION OF MAXIMUM VOLUME AND SECONDARY CONTAINMENT
DETERMINATION OF MAXIMUM CAPACITY FOR CSA-6

Calculation Basis

5. 40 CFR 264.175(c)
   a. Containment Capacity > 10% of total free liquid volume
   b. Containment Capacity > volume of largest container
6. CSA Dimension 30' x 21'
7. Ultra-Spill Deck modular containment systems
8. Aisle spacing of 2 1/2 feet either side of unit for inspection

Calculation

Max volume for CSA 6 = 7,260 gallons

<table>
<thead>
<tr>
<th>Modular Containment Device</th>
<th>Containment Volume (gallons)</th>
<th>Dimensions (Inches)</th>
<th>Device Max Volume</th>
<th>Number of Devices</th>
<th>Total Volume</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultra-Spill Deck P8</td>
<td>75</td>
<td>98.5x50x5.25</td>
<td>680</td>
<td>9</td>
<td>6,120</td>
</tr>
<tr>
<td>Ultra-Spill Deck P4</td>
<td>35</td>
<td>52x52x5.75</td>
<td>240</td>
<td>3</td>
<td>720</td>
</tr>
<tr>
<td>Ultra-Spill Deck P2</td>
<td>17.5</td>
<td>52x25.875x5.75</td>
<td>60</td>
<td>7</td>
<td>420</td>
</tr>
</tbody>
</table>

Total Volume CSA 6 = 7,260

Devive Max Volumes based on:

P8 device having eight (8) 30 gallon containers individually stacked on eight (8) 55 gallon containers: \( (8 \times 30 \text{ gallon}) + (8 \times 55 \text{ gallon}) = 680 \text{ gallons} \)

P4 device having four (4) 30 gallon containers individually stacked on four(4) 30 gallon containers: \( (4 \times 30 \text{ gallon}) + (4 \times 30 \text{ gallon}) = 240 \text{ gallons} \)

P2 device having two (2) 15 gallon containers individually stacked on two(2) 15 gallon containers: \( (2 \times 15 \text{ gallon}) + (2 \times 15 \text{ gallon}) = 60 \text{ gallons} \)