ATTACHMENT B - WASTE ANALYSIS PLAN

WASTE ANALYSIS PLAN

Heritage Environmental Services, LLC
284 East Storey Road
Coolidge, AZ 85128

AZD 081705402

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1. INTRODUCTION

Heritage Environmental Services, LLC ("Heritage") is a commercial hazardous waste management facility located at 284 East Storey Road in Coolidge, Arizona. Heritage received its Part B Resource Conservation and Recovery Act (RCRA) permit in March 1999 and a renewed permit in December 2013. Heritage is permitted to store 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 Heritage 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 Heritage is permitted to manage are listed in the facility's Part A and in Appendix E of this Waste Analysis Plan.

1.1. Hazardous Waste Management Systems

Heritage operates a hazardous waste storage and consolidation facility in Coolidge, Arizona. The waste management systems at the Coolidge facility include: Off-Site Facility, Fuel Blending, and Solids (Filter Cake) Blending for Off-site Metals Reclamation. Additional details regarding facility processes and procedures are detailed in this Waste Analysis Plan and in the Container Storage and Consolidation Plan (Attachment C).

1.2. Example Forms

Forms included in this Waste Analysis Plan are typical forms used by the facility 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, facility operations, customer needs, or corporate policies. At a minimum, the forms used by the facility will contain the information shown in the included examples and 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.

1.3. Laboratory Analysis and QA/QC Procedures

Analyses specified in this Waste Analysis Plan will be performed by Heritage in accordance with the methods specified in this Waste Analysis Plan. In general, test methods will conform with 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, including sampling procedures, are outlined in Appendix B. These procedures may require modification to incorporate additional procedures or in

response to changes in methods or internal laboratory quality assurance/quality control policy. Modifications to referenced procedures will be submitted to the Arizona Department of Environmental Quality (ADEQ) for approval, as necessary, based on regulatory requirements. Test Methods for Evaluating Solid Waste (SW 846 Physical/Chemical Methods) that are not performed during Stage 1 and Stage 2, except recheck, will be performed at a laboratory certified by the Arizona Department of Health Services (ADHS).

2. WASTE ANALYSIS PLAN OBJECTIVES

In accordance with the requirements specified in 40 CFR 264.13(b), Heritage has developed this Waste Analysis Plan for its Coolidge facility. This Waste Analysis Plan specifies the procedures to be implemented by Heritage to ensure that the following objectives are met for the Coolidge facility:

1. Only those hazardous wastes specified on the current RCRA hazardous waste permit will be approved for management at the Coolidge facility;
2. Information regarding the chemical and physical characteristics of each hazardous wastestream will be obtained, evaluated, and maintained;
3. Confirmation that each hazardous wastestream arriving at Heritage is consistent with the description and characteristics of that wastestream's approval information;
4. Hazardous wastes will be safely and efficiently, stored, treated, and managed based on the information gathered concerning each wastestream; and
5. Wastes generated at the Heritage facility will be appropriately characterized for purposes of treatment, disposal, and compliance with applicable Land Disposal Restrictions.

3. GENERAL PROCEDURES

To achieve the objectives outlined in Section 2, Heritage will implement the procedures specified in this section. This section provides a general 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. In addition, Heritage facility management and compliance staff will be directly involved with the applications of the Waste Analysis Plan that may require such input. The procedures summarized below are discussed in greater detail in subsequent sections of this Waste Analysis Plan.

3.1. Wastestream Approval

Wastestream approval procedures specified in Section 4 of this Waste Analysis Plan will be followed to characterize each hazardous wastestream received from an off-site source and to provide information upon which Heritage will base its determination regarding acceptance of each wastestream. Information gathered during the wastestream approval process will also be used to assign approved hazardous wastestreams to an appropriate waste management system. Waste management systems are discussed in Sections 1.1, 4.3, and 7.4 of this Waste Analysis Plan. Wastestream approval will include review of a wastestream survey, pre-approval sample analysis in accordance with the procedures specified in Section 4.2 (summarized separately in Section 3.2), and final wastestream approval. Review of wastestream approval information will be performed by personnel knowledgeable of the applicable criteria specified by the Heritage RCRA permit, including this Waste Analysis Plan. In addition, Heritage facility management and compliance staff will provide supervisory input during the approval process where such input may be required.

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 re-evaluated in accordance with the procedures specified in Section 4.4 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 Heritage, and assign 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 wastestream information will be maintained in the facility's operating record. Example documentation is provided in Attachment J – Recordkeeping and Reporting for reference.

3.2. Pre-approval Sample Analysis

Pre-approval sample analysis is a part of the wastestream approval process that is 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 Heritage RCRA permit, including this Waste Analysis Plan. In addition, Heritage facility management and compliance staff will provide supervisory input during review of preapproval analytical data where such input may be required.

1. Frequency - Analysis will be performed where required prior to acceptance of the initial shipment in accordance with Section 4.2 and re-evaluated in accordance with Section 4.4 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, as may be necessary; to determine whether the wastestream is acceptable to Heritage, and to assign an appropriate waste management system.
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 - Samples will be collected by the generator, a person representing the generator, a consultant, or a Heritage employee on behalf of the generator to meet Heritage's preapproval requirements or the generator's obligation under 40 CFR 264.11 (see Section 4.2). The generator will provide a certification that the sample is representative of the waste being presented for management.
6. Documentation - Analytical data obtained during pre-approval sample analysis will be maintained with other wastestream approval information in the facility's operating record. Example documentation is provided in Attachment J – Recordkeeping and Reporting for reference.

3.3. Pre-acceptance Screening

Pre-acceptance screening in accordance with the procedures specified in Section 5 of this Waste Analysis Plan will be performed for each hazardous waste shipment to ensure that the waste received has been approved, the waste can be safely stored and subsequently managed, and that the waste identified on the manifest is consistent with the waste received. Pre-acceptance screening will be performed by experienced, trained personnel who are knowledgeable of the applicable criteria specified by the Heritage RCRA permit, including this Waste Analysis Plan. In addition, Heritage facility management and compliance staff will provide supervisory input during preacceptance screening where such input may be required.

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 upon receipt. Wastestream 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 ensure that the waste received has been approved, the waste can be safely stored and subsequently managed, as appropriate, and that the waste identified on the manifest is consistent with the waste received.
4. Test Methods - Visual inspections and review of paperwork upon receipt. Wastestream 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 upon receipt. Wastestream 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. Example documentation is provided in Attachment J – Recordkeeping and Reporting for reference.

3.4. Wastestream Sampling and Analysis

Sampling and analysis of hazardous wastestreams 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. Wastestream sampling and analysis will be performed by experienced, trained sampling personnel and laboratory technicians in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed. Review of wastestream sampling and analysis data will be performed by personnel knowledgeable of the applicable criteria specified by the Heritage RCRA permit, including this Waste Analysis Plan. In addition, Heritage facility management and compliance staff will provide supervisory input during review of wastestream sampling and analysis data where such input may be required.

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 wastestream, to verify compatibility with the assigned waste management system's contents, and to verify information collected during wastestream 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 personnel 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. Modifications to referenced procedures will be submitted to the ADEQ for approval, as necessary, based on current regulatory requirements.

6. Documentation - Analytical data obtained during wastestream sampling and analysis will be maintained in the facility's operating record. Example documentation is provided in Attachment J – Recordkeeping and Reporting for reference.

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 Heritage RCRA permit, including this Waste Analysis Plan. A table of waste codes accepted by Heritage is provided in Appendix E. Any wastestream sampling and analysis will be performed by experienced, trained sampling personnel and laboratory technicians in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed. In addition, Heritage facility management and compliance staff will provide supervisory input during waste characterization where such input may be required.

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.

2. Analysis Parameters - Analysis parameters will be selected on a case-by-case basis, as necessary, to properly characterize each wastestream (see Section 8).

3. Rationale - To determine whether each 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), "Standard Methods," ASTM, or other approved methods.

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. Modification to referenced procedures will be submitted to the ADEQ for approval, as necessary, based on current regulatory requirements.

6. Documentation - Waste characterization information will be maintained in the facility's operating record. Example documentation is provided in Attachment J – Recordkeeping and Reporting for reference.

3.6. Facility Sump and Containment Waters

Characterization of precipitation accumulated in facility sumps and containments areas will be performed in accordance with Section 8 of this Waste Analysis Plan to determine whether the accumulated water is a hazardous waste and to assign appropriate hazardous waste codes and Land Disposal Restrictions information to water that is determined to be hazardous waste. Waste characterization will be performed by personnel knowledgeable of the criteria specified by applicable RCRA regulations and the Heritage RCRA permit, including this Waste Analysis Plan. Any water sampling and analysis will be performed by experienced, trained sampling personnel and laboratory technicians in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed. In addition, Heritage facility management and compliance staff will provide supervisory input during waste characterization where such input may be required.

1. Frequency - Characterization will be performed for individual accumulated waters as each unique water is accumulated and will be updated in accordance with Section 8 of this Waste Analysis Plan.
2. Analysis Parameters - Analysis parameters will be selected on a case-by-case basis, as necessary, to properly characterize each accumulated water (see Section 8).
3. Rationale - To determine whether each accumulated water is a hazardous waste, to assign applicable hazardous waste codes and Land Disposal Restrictions treatment standards to those waters 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), "Standard Methods," ASTM, or other approved methods.
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. Modification to referenced procedures will be submitted to the ADEQ for approval, as necessary, based on current regulatory requirements.

6. Documentation - Waste characterization information will be maintained in the facility's operating record. Example documentation is provided in Attachment J – Recordkeeping and Reporting for reference.

3.7. Land Disposal Restrictions

Review of incoming Land Disposal Restrictions notices and management of 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. In addition, Heritage facility management and compliance staff will provide supervisory input during review of incoming Land Disposal Restriction notices where such input may be required.

1. Frequency - Review of Land Disposal Restrictions notices from off-site sources for each shipment.
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 of incoming shipments of hazardous wastes.
4. Test Methods - Analysis will be performed in conformance with the methods specified in 40 CFR Part 268 (see Section 9).
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. Modification to referenced procedures will be submitted to the ADEQ for approval, as necessary, based on current regulatory requirements.
6. Documentation - Land Disposal Restrictions notices and analytical results will be maintained in the facility's operating record. Example documentation is provided in Attachment J – Recordkeeping and Reporting for reference.

4. WASTESTREAM APPROVAL

Heritage will require review and evaluation of hazardous wastestreams (*i.e.*, wastestream approval) prior to acceptance of the first shipment. Wastestream 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 approval process are described in this section. All evaluations will be conducted on a case-by-case, wastestream-specific basis. Wastestream approvals will be conducted by trained Heritage technical personnel who are knowledgeable of the wastestream approval requirements and Heritage waste management systems. Heritage facility management and compliance staff will provide supervisory input during review of wastestream survey information where such input may be required. The wastestream approval process is summarized in Figure 4-1.

4.1. Wastestream Survey

The hazardous wastestream approval process will begin with a review of a completed wastestream survey for the prospective wastestream. The wastestream survey will

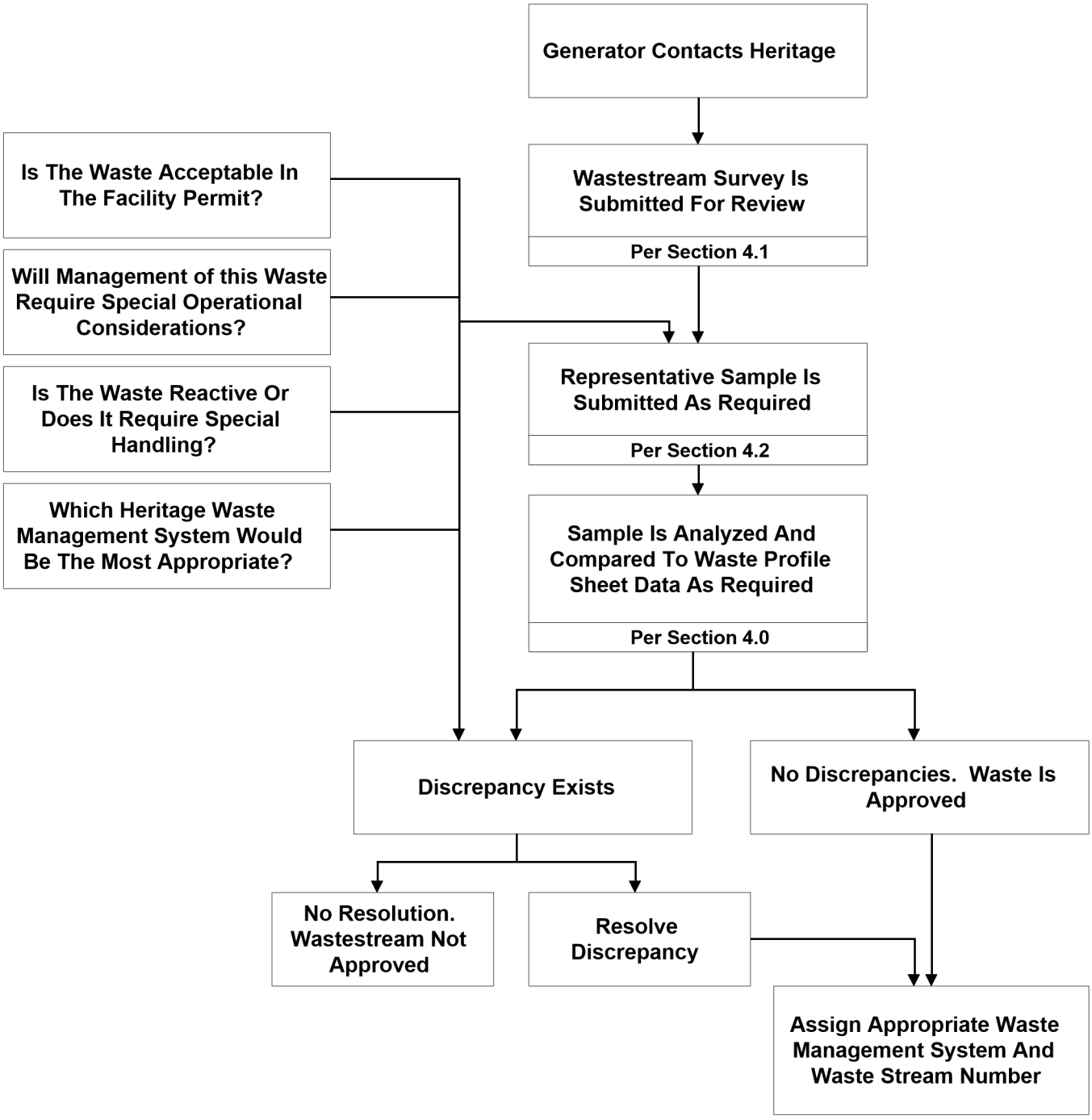
provide information necessary to characterize the wastestream, determine whether it is acceptable to Heritage, and assign an appropriate waste management system. Each wastestream survey will be completed with relevant certification(s) signed by the generator, or a generator-authorized representative, prior to approval of the hazardous wastestream by Heritage. An example blank wastestream survey form is included in Appendix C. An example completed wastestream survey is included with the example wastestream approval documentation provided in Attachment J – Recordkeeping and Reporting for reference.

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 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;
6. Applicable certification(s) regarding the information supplied on the wastestream survey; and
7. Name of the Heritage reviewer of the wastestream survey and, if different, name of the Heritage approver of the wastestream.

The wastestream survey may include additional data provided by the generator, such as safety data sheets, generating process information, and analytical data. 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 sample analysis (Section 4.2) and/or wastestream sampling and analysis as discussed in Section 6. The waste management systems and associated mandatory analytical parameters are detailed in Section 7 of this Waste Analysis Plan.

Figure 4-1
Heritage Environmental Services, LLC
Wastestream Approval Procedures



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 blank wastestream survey form is included in Appendix C. An example completed wastestream survey is included with the sample wastestream documentation provided in Attachment J – Recordkeeping and Reporting for reference.

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, an inventory list of the chemicals to be packed, or a packing list if the wastes are already packed;
3. Identification of applicable hazardous waste codes; and
4. Applicable certification(s) regarding the information supplied on the wastestream survey.
5. Name of the Heritage reviewer of the wastestream survey and, if different, name of the Heritage approver of the wastestream.

The wastestream survey may include additional data provided by the generator, such as safety data sheets, chemical-specific data, generating process information, and analytical data. 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 item 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 sample analysis specified in Section 4.2. To approve a hazardous wastestream as a commercial product, a completed wastestream survey must be reviewed. An example blank wastestream survey form is included in Appendix C. An example completed wastestream survey is included with the example wastestream approval documentation provided in Attachment J – Recordkeeping and Reporting for reference.

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.
7. Name of the Heritage reviewer of the wastestream survey and, if different, name of the Heritage approver of the wastestream.

The wastestream survey must also include safety data sheets, 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, and analytical data. 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 generatorauthorized representative, prior to approval of the hazardous wastestream by Heritage. An example blank wastestream survey form is included in Appendix C for reference. An example completed wastestream survey is included with the example wastestream approval documentation provided in Attachment J – Recordkeeping and Reporting for reference.

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 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.
7. Name of the Heritage reviewer of the wastestream survey and, if different, name of the Heritage approver of the wastestream.

The initial wastestream survey may include additional data provided by the generator, such as safety data sheets, generating process information, and analytical data. 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 pre-approval sample analysis (Section 4.2) and/or wastestream sampling and analysis as discussed in Section 6. The waste management systems and associated mandatory analytical parameters are detailed 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. An example blank wastestream survey form is included in Appendix C. An example completed wastestream survey is included with the example wastestream approval documentation provided in Attachment J – Recordkeeping and Reporting for reference.

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.
3. Name of the Heritage reviewer of the wastestream survey and, if different, name of the Heritage approver of the wastestream.

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. Pre-approval samples and analyses may not be required for site-specific wastestream approvals subsequent to the initial wastestream survey review and approval.

4.2. Pre-approval Sample Analysis

Although Heritage does not have permitted tank storage at the Coolidge, Arizona facility, bulk loads are trans-shipped through the facility. Hazardous wastestreams to be shipped in bulk containers (*i.e.*, containers with greater than 500 gallons capacity) such as tanker trucks, roll-off boxes, and semi-dump trailers will require pre-approval sample analysis. This pre-approval sample 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 sample analysis data for final approval and to assign an appropriate waste management system.

Prior to final approval of the wastestream, a representative sample of each bulk hazardous wastestream will be collected by the generator, a person representing the generator, a consultant, or a Heritage employee on behalf of the generator and analyzed to meet Heritage’s preapproval requirements or the generator’s obligation

under 40 CFR 264.11. The generator will provide a certification that the sample is representative of the waste being presented for management.

The pre-approval sample will be analyzed for the Stage 2 mandatory parameters specified for the waste management system assigned to that wastestream based on review of the wastestream survey. As discussed 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 selection of the 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 detailed in Section 7 of this Waste Analysis Plan. Supplemental analyses specified for a particular waste management system (see Section 7.4) will be performed as required by Heritage wastestream approval personnel, facility management and/or compliance staff. The supplemental analysis may be performed at Heritage (if the equipment is available) or at an outside ADHS-certified laboratory. If the information collected from the pre-approval sample is not consistent with other information developed during the profile process, then the generator will be contacted to seek clarification, or the waste will not be approved for acceptance.

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 sample analysis must include at least the Stage 2 mandatory parameters specified for the appropriate waste management system (see Section 7.4). 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.

Heritage may also accept data already documented by other Heritage facilities for a particular wastestream. Such data must include at least the Stage 2 mandatory parameters specified in Section 7.4 of this Waste Analysis Plan for the appropriate waste management system. Analytical parameters not documented by another Heritage facility 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 sample 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 managed in these systems at the Coolidge facility include:

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

2. Fuel Blending - Hazardous wastes shipped to Heritage for temporary storage followed by fuel blending and shipment to another treatment, storage, or disposal facility, and hazardous wastes shipped to Heritage for fuel blending and shipment to another treatment, storage, or disposal facility without on-site storage.
3. Solids (Filter Cake) Blending for Off-site Metals Reclamation – Hazardous waste solids (typically filter cakes) shipped to Heritage for temporary storage followed by blending with wastes from the same or similar processes and/or shipment to another treatment, storage, or disposal facility (typically for metals reclamation), and hazardous waste solids (typically filter cakes) shipped to Heritage for blending with wastes from the same or similar processes and/or shipment to another treatment, storage, or disposal facility (typically for metals reclamation) 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, pre-acceptance screening information, and shipment-specific analytical results.

4.4. Wastes Not Approved at Facility

There are types of wastes that are prohibited from being accepted to the facility for processing or permitted storage. These wastes will be vetted during the approvals process detailed in Sections 4.1 through 4.3.

Heritage does not approve the following wastes at the facility for processing or permitted storage:

- Hazardous waste bearing the hazard codes F020, F021, F022, F023, F026, F027, and F028
- Hazardous waste that the generator indicates is also mixed with wastes regulated by the Nuclear Regulatory Commission.
- Explosives that the generator indicates is forbidden from transportation or requiring a permit for storage issued by the Bureau of Alcohol Tobacco, Firearms and Explosives
- Lithium-ion battery packs
- Hazardous waste that the generator indicates is also mixed with infectious, pathogenic, or etiological wastes
- Hazardous waste that the generator indicates is also mixed with Toxic Substances Control Act (TSCA) regulated wastes requiring a commercial storage permit
- Hazardous waste that the generator indicates is also subject to storage controls by the Drug Enforcement Administration

In the event it is discovered during pre-acceptance screening activities including sample analysis and inspection of containers, markings, labels, and paperwork (see

Section 3.3) that prohibited wastes were mistakenly shipped and subsequently received, these wastes will be managed as waste discrepancies in accordance with written SOPs (see Off Spec Procedure / Load Rejection Protocols in Attachment J) and as detailed in Section 5.3. These wastes will be moved to the Lab Depack Storage Area for temporary storage and shipped off-site within 15 days. An example form that may be used to document management of these wastes is provided as Table 4-1 and included in Attachment J.

TABLE 4-1

Prohibited Waste Identification

Date:	Generator ID:	Generator Adress:	
Quantity of Wastes Mixed:	Waste Name	Quantity	Units
Total Quantity of Sample:	-		
Person Responsible for Identifying Waste:	Reason for Rejection:		
Supervisor:			
Management Plan/Procedure:			
Storage Location:			

4.5. Wastestream Reevaluation

Hazardous wastestreams will be reevaluated as often as necessary to ensure the information maintained by Heritage is accurate and up to date. Heritage collects samples in accordance with the WAP each time a wastestream is received from the generator and utilizes the fingerprint testing to confirm that the wastestream is consistent with the profile (see Sections 6 and 7). At a minimum, Heritage will reevaluate a wastestream when:

1. Heritage 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
2. When Heritage determines that the waste received at its facility is not consistent with the current wastestream information.

In addition, Heritage will request that the generator "reevaluate" the hazardous wastestreams on an annual basis to ensure the accuracy of information. The annual 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 approval may be deactivated.

5. PRE-ACCEPTANCE SCREENING

Incoming shipments of hazardous waste, including lab packs and commercial products, will be screened in accordance with the procedures described in this section to ensure that the waste received has been approved, the waste can be safely stored and subsequently managed, and that the waste identified on the manifest is consistent with the waste that has been received. Each shipment of hazardous waste will be accompanied by a hazardous waste manifest and a Land Disposal Restrictions notice. Screening will involve a paperwork review and visual inspection to confirm the wastestream is consistent with current approved wastestream information. Wastestream pre-acceptance screening will be performed by trained Heritage technical personnel who are knowledgeable of the wastestream preacceptance screening procedures. Heritage 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 will be compared against the shipment and the wastestream approval documentation:

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 not visibly leaking;
3. Hazardous waste codes on the manifest and Land Disposal Restrictions notice are consistent with each other, the container labels (outer container labels for lab packs), and the approved wastestream profile;
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 permit and the approved wastestream (lab packs only); and
6. Manifest and Land Disposal Restrictions notice are complete and correct.

For lab pack containers, after this review is complete and satisfactory, the manifest may be signed and the lab packs accepted. Each non-lab pack container will be sampled and analyzed in accordance with the applicable procedures detailed in Section 6, with the analytical results reviewed and approved prior to waste acceptance and placement into segregated storage or directly into a waste management system. After the paperwork and required analytical results are complete (see Section 6), the manifest can be signed and the waste 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.

5.2. Bulk Container Shipments

Although Heritage does not have permitted tank storage at the Coolidge, Arizona facility, bulk loads are trans-shipped through the facility. Bulk container shipments of hazardous wastes (*i.e.*, containers with greater than 500 gallons capacity) will be screened by Heritage as follows: The manifest and Land Disposal Restrictions notice

will be reviewed and the following information will be compared against the shipment and the approved wastestream profile 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 are consistent with each other, the container labels, where applicable, and the approved wastestream;
3. Correct labels/markings, where applicable, compared to approved wastestream profile and manifest; and
4. Manifest and Land Disposal Restrictions notice are complete and correct.

Each bulk hazardous wastestream will be sampled and analyzed in accordance with the procedures specified in Section 6. The paperwork and the analytical results for bulk shipments will be reviewed and approved in accordance with the requirements of Section 6 prior to signing the manifest and placement of the waste into storage or directly into a 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 manifest identified by the facility during the screening prior to acceptance are reconciled by contacting the generator (or transporter as the case warrants) of the waste shipping to the facility. Heritage contacts the generator to resolve the discrepancies and notes the discrepancy (or resolution) on the manifest or accompanying information and on the Heritage Off-Spec Form (example form provided in Attachment J). Depending on the nature of the discrepancy, Heritage may perform some or all of the following general activities in accordance with written SOPs 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 complete the wastestream approval process for a new wastestream appropriate to the situation
- Conduct additional sampling and analysis to verify or resolve the discrepancy
- Reject the waste to the generator or an alternate designated facility following the procedures in 40 CFR Part 264.72, including verification of receipt by the generator or alternate designated facility
- File an Unmanifested Waste Report, where necessary

Containers presented for acceptance at the facility that are determined to be nonconforming from a type perspective will be electronically controlled to prevent a container from further management or from being transferred by the facility until the discrepancy is resolved. Electronic controls for containers can be initiated by professionals, supervisors, technicians, 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

at the facility (See Section 4.4), wastes received 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 to the facility operating record 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. WASTESTREAM SAMPLING AND ANALYSIS

Heritage will sample and analyze incoming hazardous wastestreams as described in this section to further verify that the waste received has been approved as manifested, to confirm storage compatibility, and to confirm that the wastestream has been assigned to an appropriate waste management system. Wastestream sample analytical results will be reviewed in accordance with the procedures specified in this Waste Analysis Plan prior to accepting the wastestream. The general wastestream approval process, including preacceptance screening and wastestream sampling and analysis, is shown in Figure 6-1.

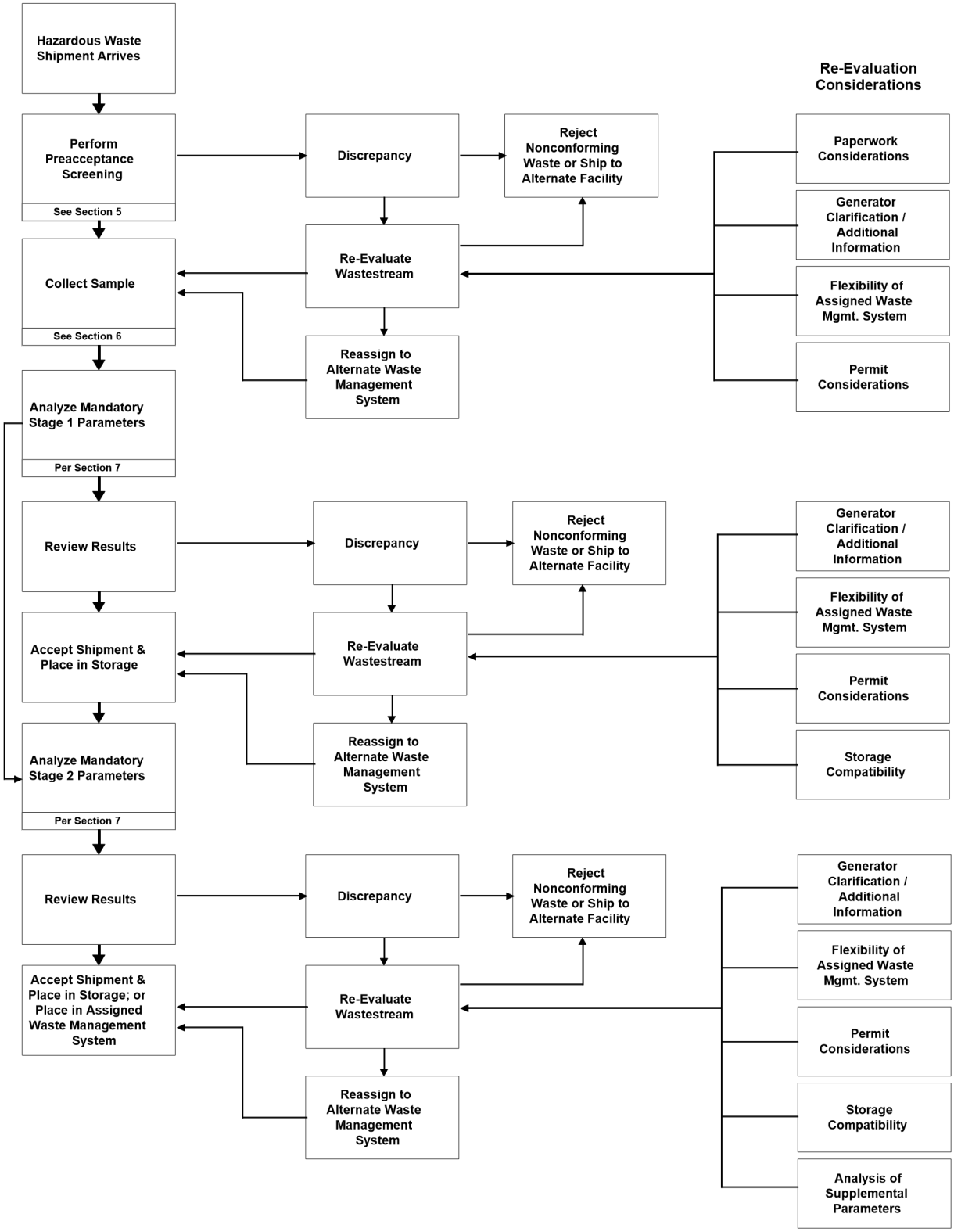
Wastestream samples will be collected by trained Heritage technical personnel who are knowledgeable of the requirements of this Waste Analysis Plan. Analyses will be performed by Heritage laboratory technicians in accordance with established quality assurance/quality control procedures and standard operating procedures for the methods employed. Appendix B contains quality assurance/quality control procedures for analytical activities. Review of wastestream 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. In addition, Heritage facility management and compliance staff will provide supervisory input during review of wastestream sampling and analysis data where such input may be required.

Wastestream analysis will be performed in two stages. Stage 1 will include analysis of parameters necessary to further confirm wastestream identification and storage compatibility. Stage 1 analyses are mandatory for each hazardous wastestream 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 wastestream-specific information gathered during the approval phase (see Section 4) and pre-acceptance screening (see Section 5). The parameters chosen for Stage 1 analysis and the rationale for their selection are described in Section 7 of this Waste Analysis Plan. Acceptable analytical methods are detailed in Appendix A.

Stage 2 analyses, when required, will consist of (a) mandatory analyses performed on each hazardous wastestream, and (b) supplemental analyses based on the specific waste type and/or the need to further characterize a particular hazardous wastestream prior to management. Stage 2 mandatory analyses will be performed on each hazardous wastestream with the exception of wastestreams managed in the off-site facility waste management system without consolidation, 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 wastestream. Stage 2 analyses and the rationale for their selection are described in Section 7 of this Waste Analysis Plan.

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

FIGURE 6-1
WASTESTREAM SHIPMENT APPROVAL



Wastes managed in the off-site facility waste management system will require analysis of the Stage 1 mandatory parameters specified in Section 7. Wastes managed in the off-site facility waste management system that will be consolidated require evaluation of the Stage 2 mandatory parameters specified in Section 7. 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 wastestreams prior to acceptance. This review procedure will be sufficient to identify potential non-conformance situations for a wastestream that will be subsequently shipped to another facility for final treatment/disposal.

Wastes managed in the fuel blending waste management system will require analysis of the Stage 1 mandatory parameters specified in Section 7. Wastes managed in the fuel blending waste management system will also require evaluation of the Stage 2 mandatory parameters specified in Section 7 prior to consolidation. 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 wastestreams prior to acceptance. This review procedure will be sufficient to identify potential non-conformance situations for a wastestream that will be subsequently shipped off site to another treatment, storage, or disposal facility.

Wastes managed in the solids (filter cake) blending waste management system will require analysis of the Stage 1 mandatory parameters specified in Section 7. Wastes managed in the solids (filter cake) blending waste management system that will be blended require evaluation of the Stage 2 mandatory parameters specified in Section 7. 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 wastestreams prior to acceptance. This review procedure will be sufficient to identify potential non-conformance situations for a wastestream that will be subsequently shipped off site to another treatment, storage, or disposal facility.

6.1. Non-bulk Container Shipments

Following completion of pre-acceptance screening as described in Section 5, hazardous wastestreams shipped in non-bulk containers will be sampled and analyzed for Stage 1 mandatory parameters as specified by Section 7 for each designated waste management system. Each wastestream will be sampled and analyzed and analytical results reviewed and approved prior to acceptance of the wastestream.

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

1. At least one sample will be collected for every container shipment received of the same wastestream (provided the media is amenable to sample collection) for any shipment of the same wastestream with ten containers or less. For shipments of the same wastestream with eleven containers or more, the minimum frequency will be one sample collected out of every ten containers received (provided the media is amenable to sample collection). For example, if 15 containers are received of the same wastestream in a shipment, two samples would be collected. 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 Appendix B).

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

3. Analytical results from the Stage 1 sampling and analysis will be reviewed to determine storage compatibility and consistency with wastestream profile information, where applicable. 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 may reassign a wastestream 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 described 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. Prior to placement of a container from a particular hazardous wastestream into the designated waste management system, Heritage will collect a representative sample 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. The same samples collected for Stage 1 analysis may be used for Stage 2 analysis.

2. 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 as required by facility management based on the specific waste type or the need to further characterize a particular hazardous wastestream prior to management. These parameters are specified for each waste management system in Section 7.4.

3. 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. 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.

4. Stage 2 results will be reviewed prior to introducing a hazardous wastestream to the designated waste management system. Heritage may reassign a wastestream 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 described in Section 7.4. Acceptable analytical methods are specified in Appendix A.

Heritage may combine Stage 1 and Stage 2 analyses to expedite management of a particular wastestream on a wastestream-specific basis.

6.2. Bulk Container Shipments

Although Heritage does not have permitted tank storage at the Coolidge, Arizona facility, bulk loads are trans-shipped through the facility. Following completion of preacceptance screening as described in Section 5, hazardous wastestreams delivered in bulk containers (i.e., containers with greater than 500 gallons capacity) will be sampled and analyzed according to the following procedures:

1. At least one sample will be collected for every container shipment received of the same waste stream (provided the media is amenable to sample collection) for any shipment of the same waste stream with ten containers or less. For shipments of the same waste stream with eleven containers or more, the minimum frequency will be one sample collected out of every ten containers received (provided the media is amenable to sample collection). For example, if 15 containers are received of the same waste stream in a shipment, two samples would be collected. 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. 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 will be analyzed for the mandatory Stage 1 and Stage 2 parameters for the designated waste management system. Additional supplemental Stage 2 analyses will be performed as required by facility management based on the specific waste type or the need to further characterize a particular hazardous wastestream prior to management. 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 acceptance of a bulk shipment 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 wastestream to a new waste management system based on the analytical results of the Stage 1 analyses.

4. Stage 2 results will be completed and reviewed prior to the first-time acceptance of a bulk hazardous wastestream 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, Stage 2 analytical results will take precedence over other information in making this determination where

conflicts are noted. Heritage may reassign a wastestream to a new waste management system based on the analytical results of the Stage 2 analyses.

7. WASTE MANAGEMENT SYSTEM ANALYTICAL PARAMETERS

Heritage will analyze hazardous wastestreams in accordance with the procedures specified in Sections 4 through Section 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 based on the specific waste type or the need to further characterize a particular hazardous wastestream prior to management.

7.1. General Testing Rationale

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

1. Identification of physical properties and chemical characteristics of each hazardous wastestream during pre-approval analysis;
2. Determination of the appropriate procedures for management of each hazardous wastestream;
3. Verification of consistency with waste profile for each shipment;
4. Verification of storage compatibility; and
5. 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.

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 appropriate and effective 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 as required to further characterize a particular hazardous wastestream. The supplemental analysis may be performed at Heritage (if the equipment is available) or at an outside ADHS certified laboratory.

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.

OFF-SITE FACILITY

Hazardous wastes managed in the off-site facility program include hazardous wastes shipped to Heritage for temporary storage followed by transfer/bulking/consolidation and/or shipment to another treatment, storage, or disposal facility; and hazardous wastes shipped to Heritage 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 the Part B Permit.

Waste consolidation (organic or inorganic) and/or bulking performed at the facility is a process to transfer liquids or solids from small containers into larger containers. This process occurs in a variety of different ways and consists of the following at the Heritage facility:

1. Transferring containers from one container to another without removing the waste from the container. An example of this is the transfer of aerosol cans from a 5-gallon pail to a 55-gallon container, moving an organic liquid in a lab pack into a larger lab pack, or transferring one-gallon cans of paint into a larger receptacle.

2. Transferring the contents of small containers into a larger container by pouring the liquids into the larger container. This process consists of the opening of the smaller receptacle and transferring the contents into a larger container. An example of this would be the transfer of one-gallon containers of flammable liquids into a 55-gallon container.

3. Transferring the contents of containers typically 55-gallons or higher in volume into a tanker trailer or railcar. This process involves the transfer of the materials by pumping from the smaller container into the larger container.

4. Transferring the contents of containers containing solids, by bulking into a larger receptacle such as a roll-off box. This process involves the transfer of materials that do not contain free liquids. An example of the process would be emptying 55-gallon containers of contaminated soil into a roll-off box or dump truck.

Nearly any hazard code may be a candidate for waste consolidation; however, waste streams that are prohibited from the application of combustion technology (See 40 CFR Part 268.3 and 40 CFR Part 268, Appendix IX) are not subject to organic waste consolidation. Wastestreams that are candidates for this process are typically organic liquids with or without water that can be readily pumped or poured into a larger container. Normally, there are no other materials added to complete the consolidation process (e.g., solidification agents, etc.)

Wastes managed in the off-site facility waste management system will be analyzed in accordance with the following. Supplemental 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. The supplemental analysis may be performed at Heritage (if the equipment is available) or at an ADHS-certified laboratory.

STAGE 1:

Mandatory Analyses	*Rationale*	*Acceptable Ranges**
PH	Proper storage segregation	Actual
Appearance (physical description)	Reference to approved wastestream	Actual
Noticeable odor	Reference to approved wastestream	Actual
Oxidizer Screen	Identify potential oxidizers	Actual
Free Liquids Determination, Paint Filter Liquids (1)	Validate proper storage location	Actual

Mandatory Analyses if pH >5	*Rationale*
Sulfide Screen	Identify presence of sulfides
Cyanide Screen	Identify presence of cyanides

STAGE 2:

Mandatory Analyses	*Rationale*
Receiving unit compatibility (container storage)	Verify compatibility with receiving unit contents

Supplemental Analyses	*Rationale*
Flash point	Verify wastestream profile
Polychlorinated biphenyls	Identify potential PCBs
BTU	Verify wastestream profile
Halogens, total (TX)	Verify wastestream profile
Water, percent	Verify wastestream profile
Cyanide, total	Verify wastestream profile
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

(1) This analysis is mandatory only for containerized wastes to be stored as solids in container storage without secondary containment. Visual inspection of the wastestream may be used to determine whether or not free liquids are present for such materials as debris, articles, soil and similar materials. Paint filter liquids will be performed for materials such as sludges, filter cakes, process wastes etc. that are amenable to Paint Filter Liquids test.

* Acceptable ranges are intended to identify those levels for each parameter that can be managed at the facility without special techniques.

FUEL BLENDING

Hazardous wastes managed in the fuel blending facility program include hazardous wastes shipped to Heritage for temporary storage followed by fuel blending and shipment to another treatment, storage, or disposal facility; and hazardous wastes shipped to Heritage for fuel blending and shipment to another treatment, storage, or disposal facility without on-site storage. Wastes managed in the fuel blending facility waste management system may carry one or more of the hazardous waste codes listed in the Part B Permit.

Fuel blending performed at the facility is a process to transfer liquids with sufficient heating value (i.e., BTU content) from small containers into larger containers. This process consists of the following at the Heritage facility:

Transferring the contents of containers typically 55-gallons or higher in volume into a tanker trailer or railcar. This process involves the transfer of the materials by pumping from the smaller container into the larger container.

Nearly any hazard code may be a candidate for fuel blending; however, waste streams that are prohibited from the application of combustion technology (See 40 CFR Part 268.3 and 40 CFR Part 268, Appendix IX) are not subject to fuel blending. Wastestreams that are candidates for this process are typically organic liquids with or without water that can be readily pumped into a larger container. There are no other materials added to complete the fuel blending process (e.g., chemical reagents).

Wastes managed in the fuel blending waste management system will be analyzed in accordance with the following. Supplemental 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. The supplemental analysis may be performed at Heritage (if the equipment is available) or at an ADHS-certified laboratory. STAGE 1:

Mandatory Analyses	*Rationale*	*Acceptable Ranges**
PH	Proper storage segregation	Actual
Appearance (physical description)	Reference to approved wastestream	Actual
Noticeable odor	Reference to approved wastestream	Actual
Oxidizer Screen	Identify potential oxidizers	Actual

Mandatory Analyses if pH >5	*Rationale*
Sulfide Screen	Identify presence of sulfides
Cyanide Screen	Identify presence of cyanides

STAGE 2:

Mandatory Analyses	*Rationale*
Receiving unit compatibility (container storage)	Verify compatibility with receiving unit contents
Polychlorinated biphenyls	Identify potential PCBs, including outbound
BTU	Verify wastestream profile, including outbound
Water, percent	Verify wastestream profile, including outbound

Supplemental Analyses	*Rationale*
Flash point	Verify wastestream profile
Halogens, total (TX)	Verify wastestream profile
Cyanide, total	Verify wastestream profile
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

* Acceptable ranges are intended to identify those levels for each parameter that can be managed at the facility without special techniques.

SOLIDS (FILTER CAKE) BLENDING FOR OFF-SITE METALS RECLAMATION

Hazardous wastes managed in the solids (filter cake) blending program include hazardous waste solids (typically filter cakes) shipped to Heritage for temporary storage followed by blending with wastes generated from the same or similar processes and/or shipment to another treatment, storage, or disposal facility (typically for metals reclamation) and hazardous waste solids (typically filter cakes) shipped to Heritage for blending with wastes generated from the same or similar processes and/or shipment to another treatment, storage, or disposal facility (typically for metals reclamation) without on-site storage. Wastes managed in the solids (filter cake) blending waste management system may carry one or more of the hazardous waste codes listed in the Part B Permit. Wastes managed in the solids (filter cake) blending waste management system will be analyzed in accordance with the following. Supplemental 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. Supplemental analysis may be performed at Heritage (if the equipment is available) or at an outside ADHS-certified laboratory. STAGE 1:

Mandatory Analyses	*Rationale*	*Acceptable Ranges**
PH	Proper storage segregation	Actual
Appearance (physical description)	Reference to approved wastestream	Actuals
Noticeable odor	Reference to approved wastestream	Actual
Oxidizer Screen	Identify potential oxidizers	Actual
Organic Vapor Screen	Identify potential volatile organic compounds	Actual
Paint Filter Liquids (1)	Validate proper storage location	Actual
Mandatory Analyses if pH >5	*Rationale*	
Sulfide Screen	Identify presence of sulfides	
Cyanide Screen – Hach Kit	Identify presence of cyanides	

(1) This analysis is mandatory only for containerized wastes to be stored in container storage areas without secondary containment. STAGE 2:

Mandatory Analyses	*Rationale*
Receiving unit compatibility (container storage)	Verify compatibility with receiving unit contents

Supplemental Analyses	*Rationale*
Flash point	Verify wastestream profile
Polychlorinated biphenyls	Identify potential PCBs
BTU	Verify wastestream profile
Halogens, total (TX)	Verify wastestream profile
Water, percent	Verify wastestream profile
Cyanide, total **	Verify wastestream profile
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

* Acceptable ranges are intended to identify those levels for each parameter that can be managed at the facility without special techniques.

** Analytical results are available prior to acceptance at the facility for materials managed in the solids (filter cake) blending program.

8. CHARACTERIZATION OF HERITAGE-GENERATED HAZARDOUS WASTE

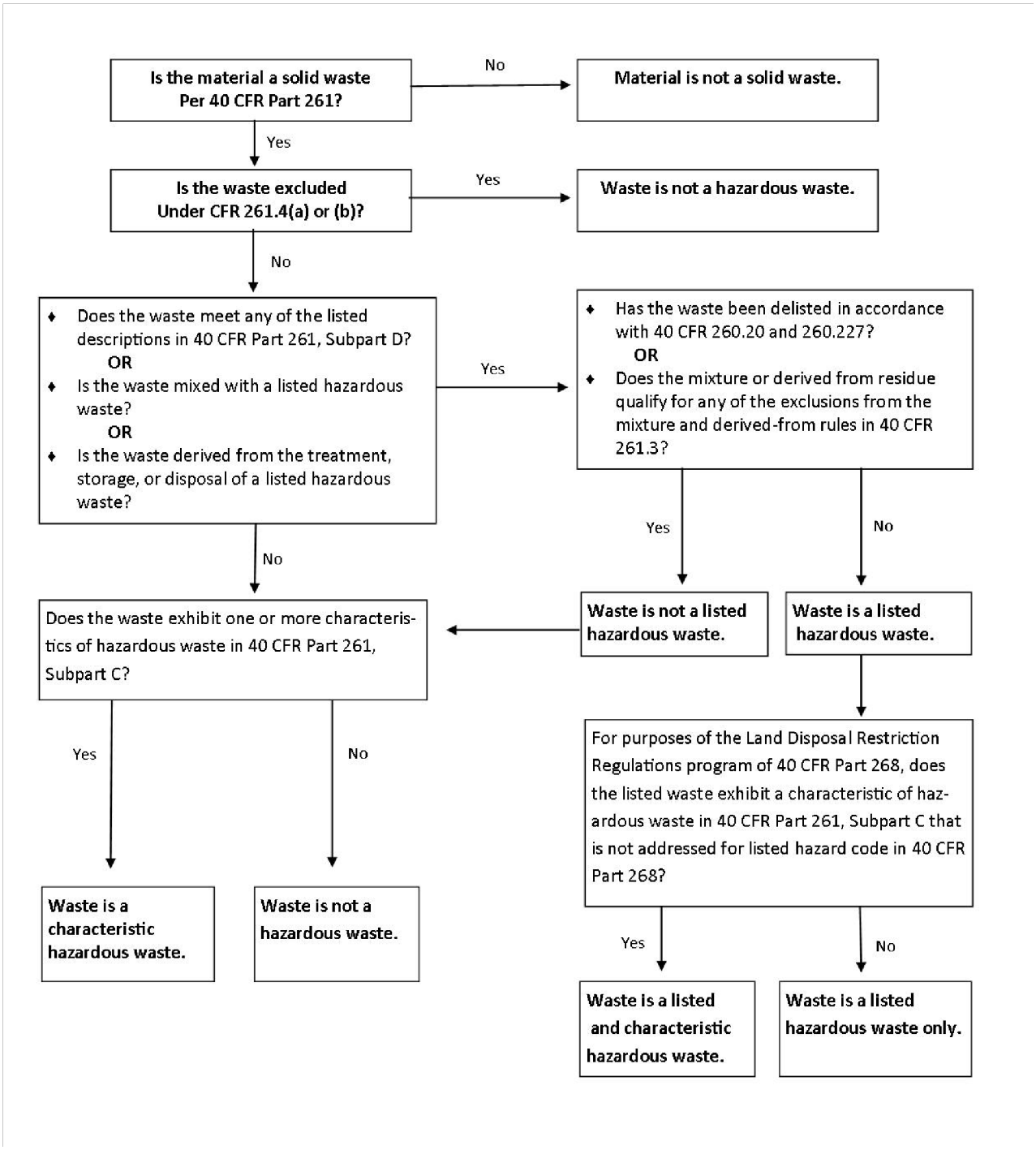
Heritage has the potential to generate hazardous waste on-site as a result of hazardous waste storage and consolidation operations. Heritage will assess on-site generated wastes in accordance with the requirements of 40 CFR 262.11, using either laboratory analysis or knowledge of the waste and the process(es) generating the waste. Figure 8-1 shows the general waste characterization procedures for Heritage-generated wastes. Facility-generated hazardous wastes may be accumulated on-site for ninety 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 virtue of the "mixture rule" (40 CFR 261.3(a)(2)(iv)) or the "derived from rule" (40 CFR 261.3(c)(2)).

Hazardous waste determinations for on-site generated wastes will involve laboratory analysis and/or knowledge as appropriate. Available information collected during the approval and acceptance process may be used to make these determinations. This information may include wastestream survey information, pre-approval analysis results, and/or wastestream 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, by Heritage, or by a Heritage-contracted laboratory during the off-site approval process. Any analysis performed on Heritage-generated waste will be in accordance with current required methodology, where applicable. Analyses identified as "Heritage" methods in the Analytical Methods table in Appendix A may be performed by Heritage; all other analytical methods shall be performed by an ADHS-licensed laboratory.

Heritage 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:

1. the process or operation generating the hazardous waste has changed in a way that changes the key characteristics of the waste; or
2. when an off-site facility determines that the Heritage-generated waste received is not consistent with the current wastestream information.

Figure 8-1
Heritage Environmental Services, LLC
Hazardous Waste Characterization Procedures



9. LAND DISPOSAL RESTRICTIONS

Heritage 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 and sampling and analysis of treatment residue. The specific provisions of this compliance program are discussed in this section.

9.1. Hazardous Wastes Received 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 D for reference. This form may be modified due to changes in regulations, Heritage corporate policy, or customer needs.

Hazardous waste shipments delivered to Heritage that are subject to the Land Disposal Restrictions will be accompanied by a Land Disposal Restrictions notice. Alternately, Heritage may require a one-time Land Disposal Restrictions notice. As required by 40 CFR 268.7, the notice is to include:

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

As described in Section 5, the Land Disposal Restrictions notice will be reviewed 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.

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

9.2. LDR Compliance for Facility-Generated Wastes

Heritage will determine whether each facility-generated hazardous waste is a restricted waste subject to the Land Disposal Restrictions at 40 CFR Part 268. Heritage 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 non-wastewater) and, if applicable, by their subcategory within a treatability group. Heritage will make this determination using either laboratory 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 the USEPA has not promulgated treatment standards will not be subject to the Land Disposal Restrictions.

For lab packs that are packed by Heritage at the Coolidge facility for management at an off-site treatment, storage, or disposal facility, Heritage 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 managed by the appropriate specified treatment technology. Heritage will use either sample analysis or knowledge to make this determination. Heritage 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 Heritage-generated hazardous wastes destined for land disposal (e.g., treatment residues), 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).

Heritage will submit a notice and certification to the land disposal facility with each shipment of restricted hazardous waste or treatment residue of a restricted hazardous waste shipped to a land disposal facility, 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, Heritage will submit notifications and certifications in compliance with the notice and certification requirements under 40 CFR 268.7(a). Each shipment of hazardous waste that is transported to an off-site RCRA-permitted facility will include a written notification and certification that the waste either meets or does not meet applicable treatment standards or prohibition levels.

Heritage 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).

Heritage 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

ANALYTICAL METHODS

ACCEPTABLE ANALYTICAL METHODS HERITAGE ENVIRONMENTAL SERVICES, LLC WASTE ANALYSIS PLAN	
PARAMETER	**METHOD***
Inorganic Constituents:	
Metals, Total [2]	SW-846 6010B
Chromium hexavalent [1], [2]	SW-846 7196A; SW-846 3060A; APHA 3500-Cr B[3] ; Hach kit[1]
Mercury, total [2]	SW-846 7470A; SW-846 7471A
Cyanide, total [2]	SW-846 9010B
Cyanide, amenable [2]	SW-846 9012A, Hach Kit[1]
Cyanide, free [3],	APHA 4500.E
Organic Constituents:	
Organic carbon, total (TOC) [2],[3]	SW-846 9060
Petroleum hydrocarbons, total (TPH) [2],[3]	APHA 5520; EPA 418.1
Phenols [3]	SW-846 9066; EPA 420.1; EPA 420.2; Hach kit
Polychlorinated biphenyls (PCB) [2]	SW-846 8082A
PCB Screen [3]	Positive/Negative – Positive confirmed and quantified by Method 8082, Heritage[1]
Semivolatile Organic Compounds [2]	SW-846 8270C
Volatile Organic Compounds [2]	SW-846 8260B
Herbicides and Pesticides [2]	SW-846 8081A/8151A
Carbamates [2]	SW-846 8318/8321A/EPA 630[3]
Alcohols [2]	SW-846 8015B
Pesticides GC/NPD [2]	SW-846 8141A/EPA 507[3]
Pesticides GC ECD [2]	SW-846 8081A/EPA 508[3]
Dioxins and Furans [2]	SW-846 8280A/8290
Miscellaneous:	
Acidity [3]	EPA 305.1; APHA 2310, Heritage
Alkalinity [3]	EPA 310.1; APHA 2320
Appearance (physical description) [1], [3]	Manual inspection
Bottom sediment & water (BS&W) [3]	ASTM D-96 (1988)

BTU [3]	ASTM D-240-02 (2002); ASTM D-4809 (2000)
Chemical oxygen demand (COD) [3]	EPA 410.4; APHA 5220
Chlorine, percent [3]	ASTM D-240-02 or ASTM D-5839-96 (2006)
Compatibility, Aqueous [1]	Heritage

ACCEPTABLE ANALYTICAL METHODS HERITAGE ENVIRONMENTAL SERVICES, LLC WASTE ANALYSIS PLAN	
PARAMETER	**METHOD***
Compatibility, Receiving Unit [1]	Heritage
Density [3]	Heritage
Flammability Potential [3]	ASTM D-4982-95 (2001)
Flash point [2]	SW-846 1010; ASTM D-93-2002a; ASTM D-3278-96 (2002)e1
Halogens, total (TX) [1], [2]	Chlor-D-Tect, SW-846 9075; ASTM D-5839-96 (2006)
Halogenated solvents (Used Oil) [1], [2]	SW-846 8010 (Modified)
Nitrate/nitrite strip test [3]	Test paper
Oxidizer Screen of Waste [1]	ASTM D-4981-95
Paint filter liquids test [1]	SW-846 9095A
PH [1]	Test paper; SW-846 9040B; SW-846 9045C; APHA 4500H+
Solids, percent [3]	ASTM D-2042-2001= Insoluble in TCE Regular Total Solids = EPA160.3
Sulfide Screen for Waste[1]	ASTM D4978-95 (updated 2001)
Sulfur, percent [3]	ASTM D4294 (2002); SW-846 9075
Toxicity Characteristic Leaching Procedure [2]	SW-846 1311
Visible free liquids [1]	Manual inspection
Volatile Organic Compound Screen [1]	Heritage
Water, percent [3]	ASTM D-4377(2000) - Karl Fisher Method

Notes:

* If the analytical method requires ADHS approval, then only ADHS-approved methods will be used.

(1) Test methods typically performed by Heritage at facility.

(2) Test methods performed by contracted laboratories. Samples collected by the facility and submitted for analysis will be tested at ADHS-certified laboratories.

(3) Test methods are screening methods or wastewater methods and are not utilized for determining compliance with the land disposal restrictions. Methods may be used for evaluation of commercial characteristics of wastes. SW-846 Test Methods are utilized for determining compliance with the land disposal restrictions.

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 at the facility. Other constituents, 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 600/4-79020.
ASTM test methods are specified in "Annual Book of ASTM Standards."
APHA methods are specified in "Standard Methods for the Examination of Water and Wastewater", current edition. Heritage methods are specified in the following standard operating procedures (Pages C-41 - C-44).

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

The facility follows the quality assurance/quality control plan in Appendix B of the Waste Analysis Plan when conducting analysis.

LIQUID DENSITY POUNDS PER GALLON

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 Heritage using the following procedure.

Apparatus: Graduated cylinder (50 or 100 ml) clean and dry
Analytical Balance

Method:

1. Place the empty graduated cylinder on the scale, then tare the weight until a reading of 0.00 g is attained.

2. Pour the maximum allowable volume (by scale markings) in the graduated cylinder. Any liquid spilled on the scale or side of the cylinder must be removed before proceeding.

3. Record the weight in grams and the volume in ml.

Calculation:

$$\frac{mass\ of\ liquid\ in\ grams}{volume\ in\ mL} \times 8.345 = Density\ in\ pounds\ per\ gallon$$

NOTE: Single-phase oils, whether emulsified or simply good oil, are tested using hydrometers as follows:

Density by Hydrometer API

Apparatus: Hydrometer
Graduated Cylinder (100 ml)
Tabulated API values with corresponding densities (ASTM handbook)

Method:

1. Pour the oil 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.

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 of the cylinder. 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.

3. Read the numerical value from the hydrometer at the surface of the liquid. Remove the hydrometer from the cylinder, wipe it clean, and read the temperature on the thermometer.

4. With the hydrometer scale value and the temperature, consult the API reference chart to obtain the appropriate API value (obtained by matching the scale value with the temperature in the table).

5. Proceed to the API-to-pounds per gallon chart and reference the API value to the correct density in pounds per gallon.

CONSOLIDATION COMPATIBILITY DETERMINATION – SOLIDS AND LABPACKS

The following compatibility determination procedures are appropriate for consolidation of dissimilar wastes prior to shipment to a third-party treatment, storage, or disposal facility. Such activities typically include consolidation of solids and debris into roll-off containers, bulking of lab pack wastes, or repackaging of materials 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, and debris. Hazardous wastes that are managed on site are tested in accordance with the requirements for the applicable waste management system (see Section 7.4).

1. Prior to consolidating dissimilar wastes, determine waste compatibility based on the following information, as available: completed wastestream surveys, 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 compatibility chart (see Table A-1 below).

3. If there is not an "X" noted in Table A-1 for the waste combination in question, the wastes may be consolidated. An "X" in Table A-1 denotes a waste combination that is likely to be incompatible. Waste combinations marked by an "X" in Table A-1 shall not be consolidated.

TABLE A-1
HERITAGE COMPATIBILITY CHART

	Acids	Bases/ Caustics/ Alkalies	Chlorinated Solvents	Class 9/ Aqueous	Cyanides	Flammables/ Combustibles	Oxidizers
Acids		X	X		X	X	X
Bases/Caustics/ Alkalies	X		X				
Chlorinated Solvents	X	X			X		X
Class 9/ Aqueous							
Cyanides	X		X				X
Flammables/ Combustibles[1]	X						X
Oxidizers	X		X		X	X	

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".

RECEIVING UNIT COMPATIBILITY TEST – LIQUIDS

1. Prior to bulking liquid wastes expected of being compatible based on the Heritage Compatibility Chart, mix appropriate ratios of the actual waste materials to be bulked in a test cup that represents the materials for bulking. Appropriate ratios are calculated based on the volume of the materials selected for pumping into a receiving unit including a tanker or rail car. Use between 500 ml and 1,000 ml total sample size.

2. Prior to beginning the mixing process, personnel mixing the materials shall don personal protective equipment using the personal protective equipment guideline (reference the ppe chart posted in the laboratory and an example is shown below). Required equipment consists of chemical resistant gloves, safety glasses or goggles, and a lab coat or other suitable splash protection device (e.g., chemical resistant suit, apron, etc.)

3. Set up samples under a fume hood with adequate ventilation.

[1] Non-chlorinated solvents and oils.

4. Stir the sample to ensure that it is well mixed and then place an empty cup, watch glass, or other device that will contain the sample to form a closed system. Watch for polymerization, violent reactions, violent foaming, gas evolution, or significant temperature changes. Measure the temperature change by thermometer or infrared detection depending on the extent of the reaction, if any.

5. If no polymerization, observable reactions, gas evolution, violent foaming, or temperature changes are observed within a ten-minute period, the sample passes the compatibility test and the waste may be transferred to the designated receiving unit.

6. If a minor or significant reactions, gas evolution, or temperature changes are observed during the ten-minute test period, allow the sample to set for a longer period of time and continue to observe. Notify supervisor or facility management immediately. The waste may not be transferred to the receiving unit without additional testing, as determined by supervisory staff.

7. Repeat compatibility test as necessary to determine appropriate management of the waste.

8. Compatibility test results must be noted on the form provided as TABLE A-1, or equivalent.

FIGURE A-1
EXAMPLE PPE GUIDE

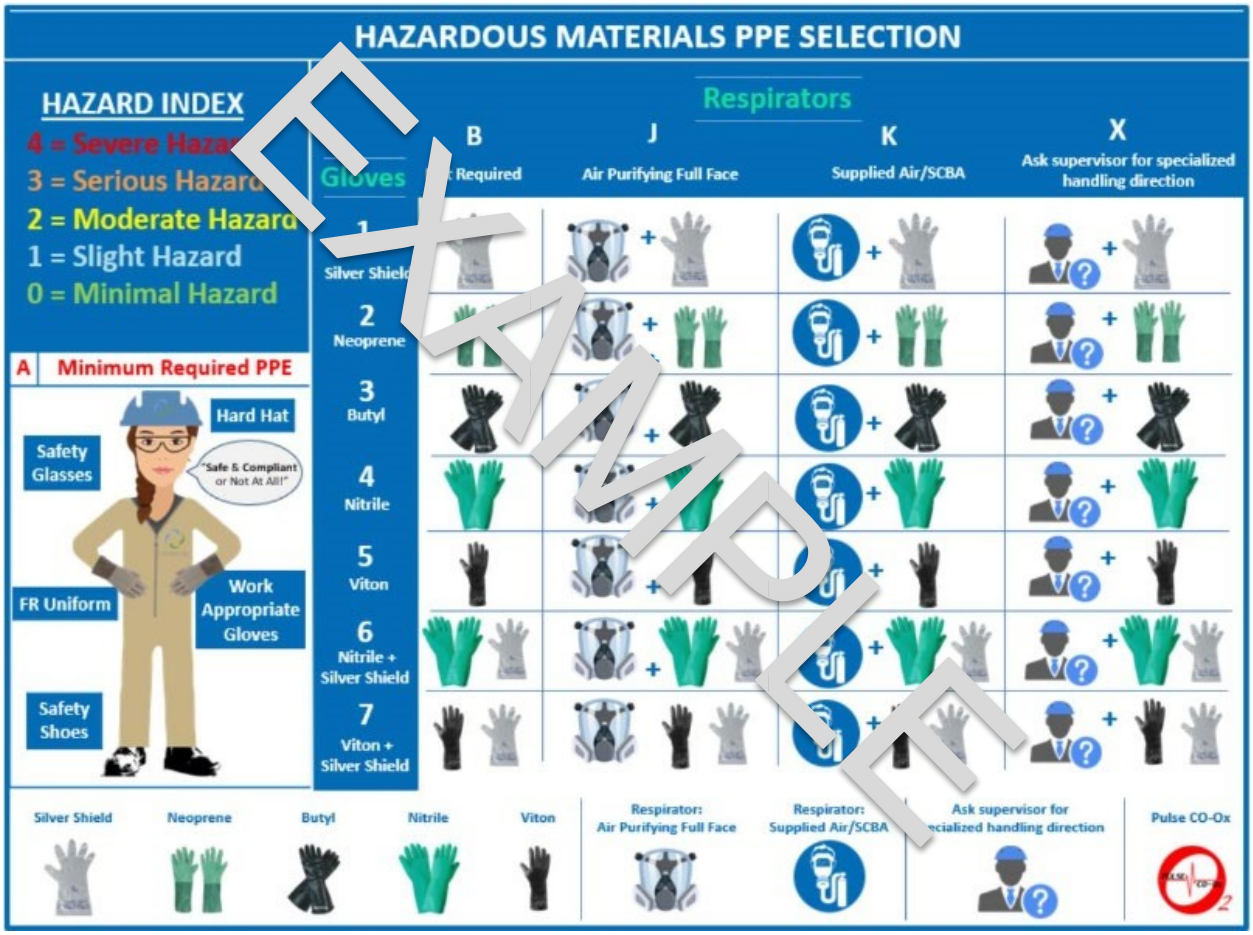


TABLE A-1			
Receiving Unit Compatibilty Test - Liquids			
Date:	Generator ID:	Generator Adress:	
Technician Name:			
Quantity of Wastes Mixed:	Waste Name	Quantity	Units
Total Quantity of Sample:	-		
Observations (Reactions, Temp. change, etc.):			
Management Procedures:			
Storage Container Identification:			

VOLATILE ORGANIC COMPOUND SCREENING

The following procedure will be used to screen incoming hazardous wastes that are scheduled for solids (filter cake) blending and shipment to an offsite facility (for metals reclamation). This procedure is designed as a screening tool to evaluate the presence or absence of volatile organic compounds in the material.

1) Obtain a sample from the container holding the material in accordance with facility sampling procedures for screening purposes.

2) Crumble the sample and place into a glass container, Zip-Loc bag, or equivalent. Seal the container and shake the sample for a few seconds. After shaking the sample, open the sample container and immediately measure the headspace with an organic vapor analyzer.

3) A flame ionization or photo ionization detector may be used to conduct the screening measurement. The user's manual for the instruments should be consulted for specific instrument operating instructions.

4) Record the highest value indicated by the instrument when the probe is inserted.

5) If a positive result is indicated, contact facility supervisory staff for additional evaluation of the sample including the collection of additional sample for further screening.

6) The material may be accepted at the facility and placed in storage until further evaluation has been completed and a determination has been made as to whether or not the material is suitable for the solids (filter cake) blending program. This determination will be made within 28 days, including 14-day standard turnaround time for off-site laboratory analysis, when applicable.

7) VOC screening results must be noted on the form provided as TABLE A-2, or equivalent.

TABLE A-2			
Volatile Organic Compound Screening			
Date:	Generator ID:	Generator Adress:	
Technician Name:			
Quantity of Wastes Mixed:	Waste Name	Quantity	Units
Total Quantity of Sample:	-		
Observations (Reactions, Temp. change, etc.):			
Additional Evaluation:			
Storage Location:			

APPENDIX B

QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

WASTE ANALYSIS PLAN QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

Heritage Environmental Services, LLC
284 Storey Road
Coolidge, Arizona 85128

1. STATEMENT OF POLICY

It is the policy of Heritage Environmental Services, LLC ("Heritage") 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 Waste Analysis Plan for the Heritage facility in Coolidge, Arizona. The primary function of the Waste Analysis Plan is to specify procedures for sampling and analyzing off-site generated and facility-generated hazardous wastestreams. Wastestream sampling and analysis will be conducted to ensure that:

1. only those hazardous wastes specified in the current RCRA hazardous waste permit are accepted for management at the Coolidge facility;
2. information regarding the chemical properties and physical characteristics of each hazardous wastestream will be obtained, evaluated, and maintained;
3. each hazardous wastestream arriving at Heritage 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 Heritage facility will be appropriately characterized for purposes of disposal and compliance with applicable land disposal restrictions.

Heritage 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 at the Coolidge facility utilize industry-accepted procedures for obtaining samples of hazardous waste for characterization and compatibility purposes. Hazardous wastes received for management vary 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 sludge. In addition, wastes are received in closed containers, which by design allow for gravity separation.

These procedures address the unique mix of wastes handled by the waste management facility and the challenges that their characteristics present. These procedures are written to support the purpose of the Waste Analysis Plan (to characterize the wastes which are received at Heritage, both physically and chemically, in order to assure safe and appropriate management of the waste). These procedures utilize, as guidance, the practical aspects of 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 in accordance with the facility's Standard Operating Procedure (SOP) 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. Examples of some of these pieces of sampling equipment are illustrated in Appendix B-1 of this section.

2.2 Sample Management

The purpose of the sampling and analysis activities is to ensure that the waste received has been approved, that the waste can be safely stored and subsequently managed, and that the waste identified on the manifest is consistent with the waste that has been received. Time constraints are placed on the waste acceptance process that requires on-site 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. In the event that off-site laboratory analysis is necessary, sample preservation may be required. Sample bottles with the appropriate preservatives provided by the off-site laboratory will be utilized or the offsite laboratory will be consulted to determine preservation requirements for samples collected in the facility's sample containers.

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 Personal Protective Equipment

Employees conducting sampling and analysis will wear personal protective equipment that is suitable to collect hazardous waste samples at the facility. At a minimum, employees collecting and analyzing samples of hazardous waste will wear safety glasses and protective gloves to collect and analyze samples. Personal protective equipment will vary depending on the type of samples, the material being sampled, and the location where samples are collected or handled.

2.4 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 that is associated with the shipping paperwork.

3. ANALYTICAL METHODS

Analytical methods used during implementation of the Waste Analysis Plan at the Coolidge facility 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 600/4-79020);
3. ASTM's "Annual Book of ASTM Standards;" and
4. "Standard Methods for the Examination of Water and Wastewater," current edition.

Analytical methods are specified in Appendix A of the facility Waste Analysis Plan.

4. CALIBRATION PROCEDURES AND FREQUENCIES

1. Analytical balances are under service contract for periodic calibration and maintenance by an outside vendor.
2. All laboratory technicians are trained in preventive 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 1

Instrument	Action	Time Frame
pH Meters/Probes	Calibration	Once per shift
Gas Chromatograph	Blank and Standard Analyses	Once per shift

APPENDIX B-1

SAMPLING EQUIPMENT

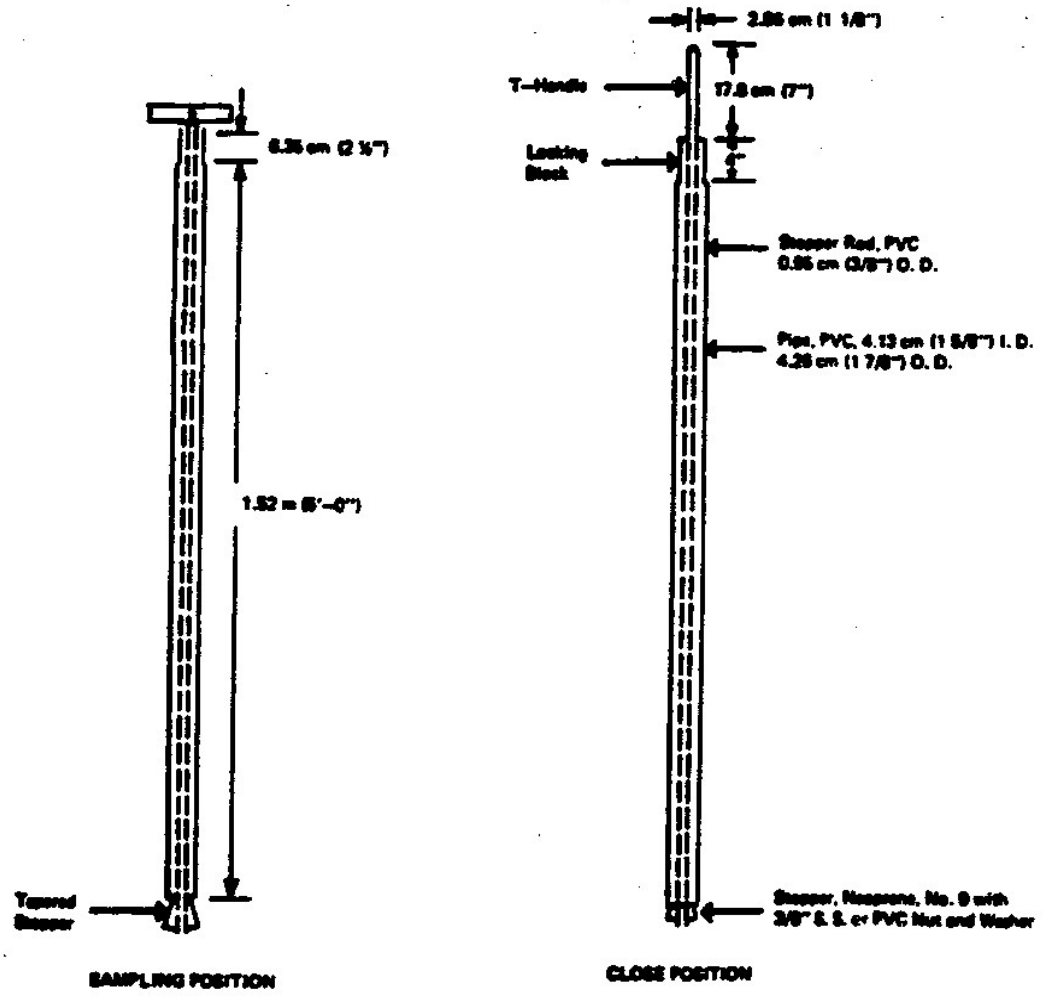


Figure 9-9. Composite liquid waste sampler (Coliwasa).

Revision 0
Date September 1986

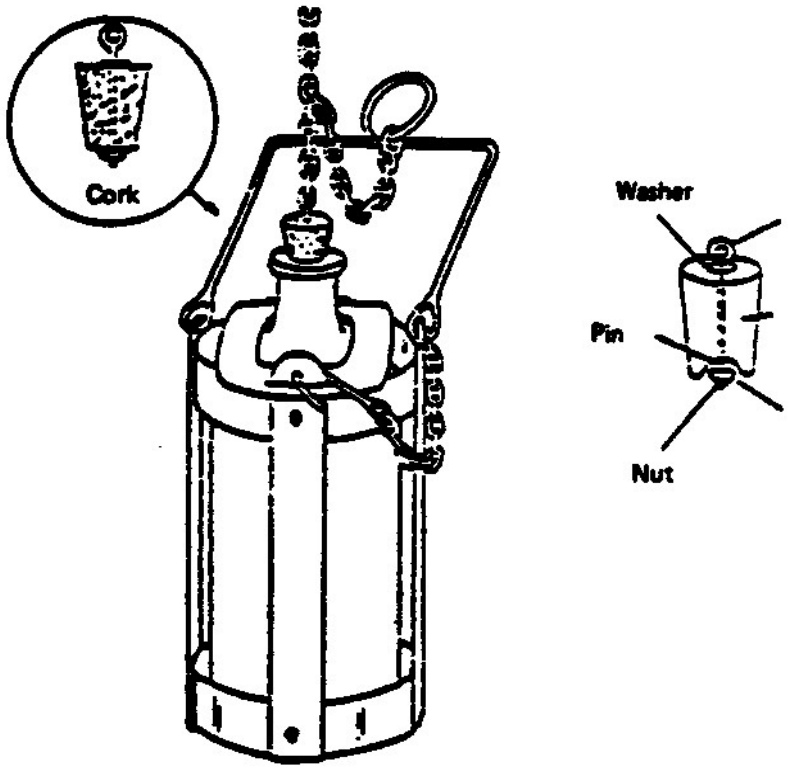


Figure 9-10. Weighted bottle sampler.

Revision 0
Date September 1986

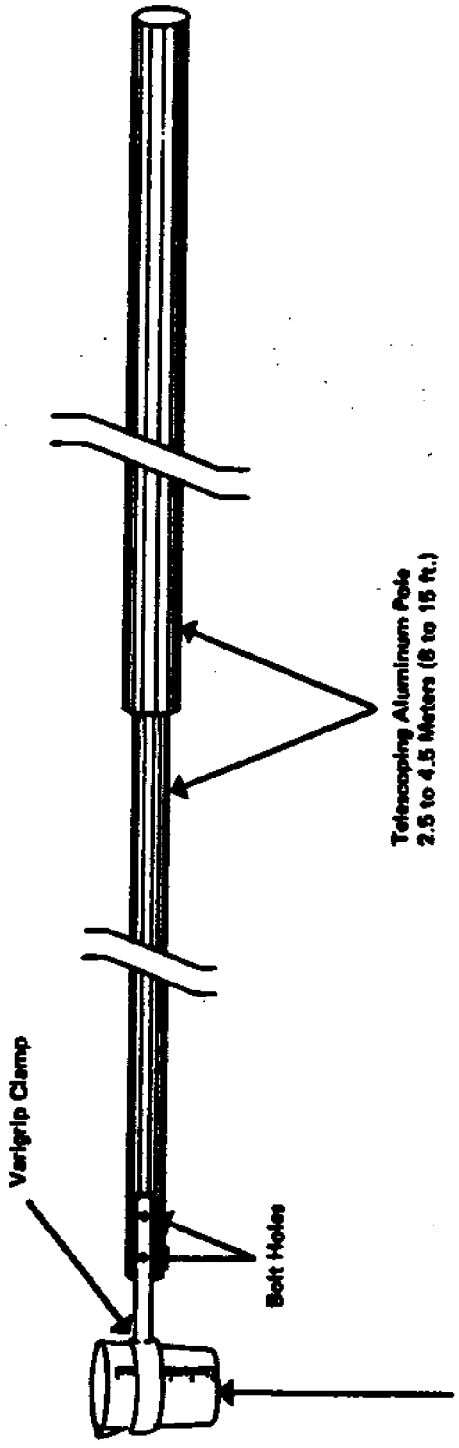


Figure 9-11. Dipper.

Revision 0

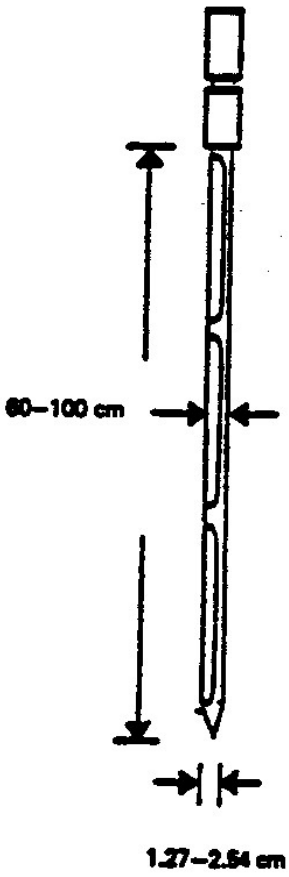


Figure 9-12. Thief sampler.

Revision 0
Date September 1986

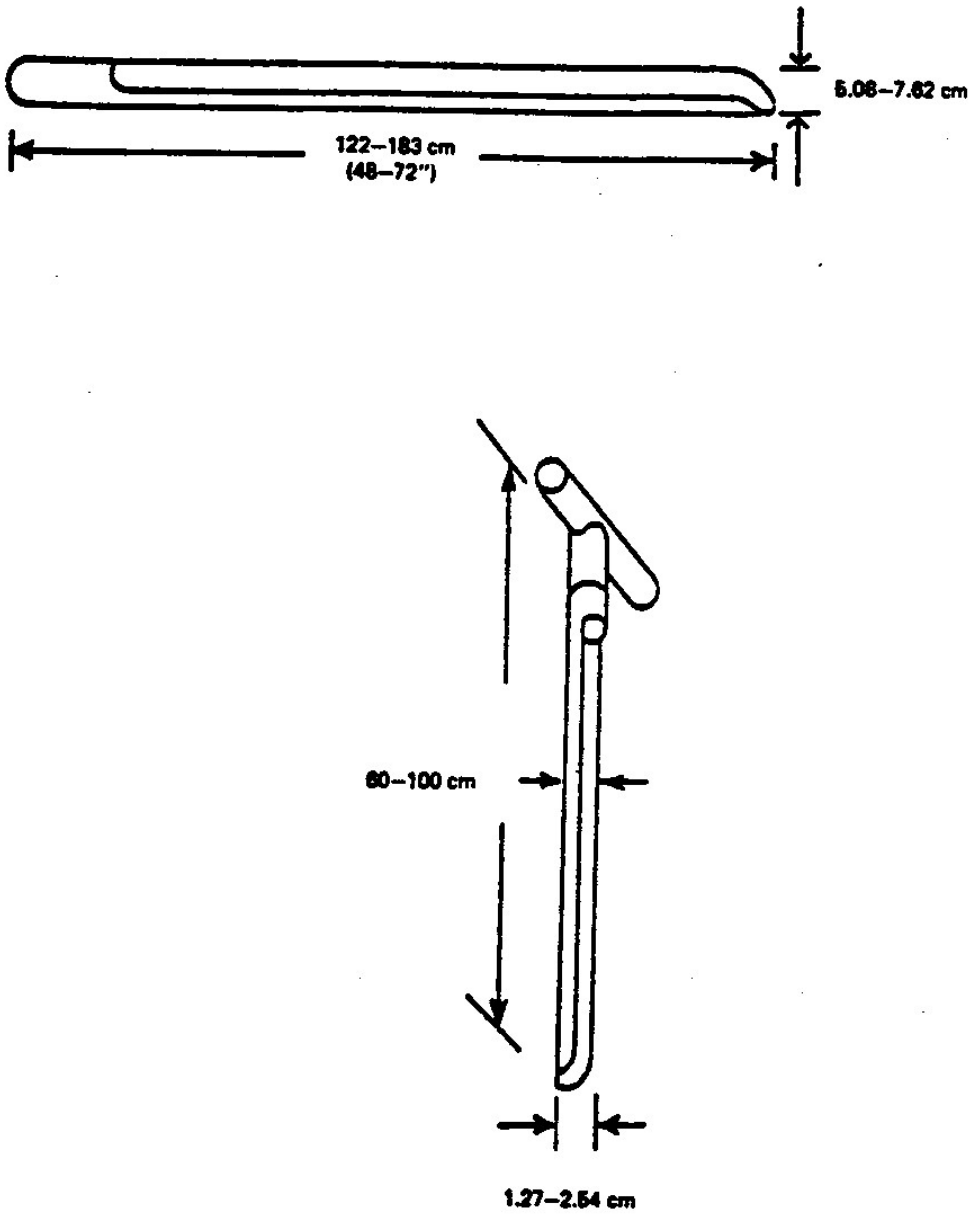


Figure B-13. Sampling triers.

Revision 0
Date September 1986

APPENDIX C

EXAMPLE WASTESTREAM SURVEY FORM

HERITAGE ENVIRONMENTAL SERVICES

HERITAGE ENVIRONMENTAL SERVICES, LLC
WASTESTREAM SURVEY FORM
(877)436-8778
www.heritage-enviro.com
Please review instructions before completing this form.

Heritage Use Only			
Quote #:	WS#:		
Business Type: Repeatable: ☐	Non-Repeatable: ☐		
Product Code:	Price:		

Preferred TSD*:	Coolidge, AZ ☐	Indianapolis, IN ☐	Kansas City, MO ☐	Roachdale, IN ☐	Heritage-WTI ☐	
Service Location.*:	Albany, NY ☐	East Liverpool, OH ☐	Lemont, IL ☐	Louisville, KY ☐	Signal Hill, CA ☐	
	St. Louis, MO ☐	Toledo, OH ☐	Tulsa, OK ☐			

1. GENERATOR INFORMATION (Heritage#) *
Generator Name
Address
City, State
Zip, County
Tech. Contact Name
Phone Fax
24 Hour Emergency Number
E-mail Address
US EPA ID Number
State ID Numbers
Status LQG ☐ SQG ☐ CESQG ☐ Non-hazardous ☐

2. BILLING INFORMATION (Heritage #) *	
Customer Name	
Address	
City, State	
Zip, County	
Contact Name	
Phone	Fax
E-mail Address	
3. MANIFEST MAIL ADDRESS *(if different from generator)*	
Contact Name	
Company Name	
Address	
City, State, Zip	

4. Generator SIC Code	If 3312, generated from Coke Oven Byproduct Recovery Operations? Yes ☐ No ☐	If 28__, 2911, 3312, or 4953, what is the Total Annual Benzene (TAB) in Megagrams/year?
5. Common Name		
6. Process Generating Waste		
7. DOT Description * (*if available*)		

8.	Identify US EPA waste codes	
9.	D001-D043, F001-F005, or F039 underlying or hazardous constituents present? Yes☐ No☐ NA☐ If yes, list in Section 12.	
10.	US EPA Form Code *	US EPA Source Code *
11.	Identify state waste codes	

12. Waste Composition: Using specific chemical names and/or descriptions of waste composition, list all constituents present in the wastestream, and identify those that are underlying hazardous constituents (UHCs), or F001-F005/F039 hazardous constituents. Attach available analysis or MSDSs. **Total composition must equal or exceed 100%.**

Constituents	Range	Units	UHC?	F-Listed?
			Yes ☐	Yes ☐
			Yes ☐	Yes ☐
			Yes ☐	Yes ☐
			Yes ☐	Yes ☐
			Yes ☐	Yes ☐
			Yes ☐	Yes ☐
			Yes ☐	Yes ☐

13.	Color	Odor

14. 14a. Chemical Properties

Flash Point (F°)	< 73 ☐	BTU/lb Range	
	73-<100 ☐		
	100-<140 ☐		
	140-<200 ☐	Low	
	>= 200 ☐		
		High	
Boiling Point (F°)	< 100 ☐	pH Range	
	> 100 ☐		

14b. Physical Properties at 70°F

Solid	☐	Free Liquids/Fail Paint Filter?	Yes ☐ No ☐
Liquid	☐	Will waste dump out of drums?	Yes ☐ No ☐
Sludge	☐	Is the waste pumpable?	Yes ☐ No ☐
Semi-solid	☐	Will heat improve flow?	Yes ☐ No ☐
Powder	☐	Debris?(List type in Section 12)	Yes ☐ No ☐
Gas	☐	Dust hazard?	Yes ☐ No ☐

% Solids	% Liquids

Note: * These sections will be completed by Heritage if left blank.

EXAMPLE FORM

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Common Name (same as Item #5):

15. Check all that apply. Marking any of these may require additional documentation or follow-up information.

15a.

Aerosols	☐	Metal Powders	☐
Air Reactive	☐	Oxidizer	☐
Ammonia	☐	Pathogen	☐
Asbestos	☐	Pesticide	☐
Autoignitable	☐	Polymerizable	☐
Biological	☐	Pyrophoric	☐
Carcinogen	☐	Radioactive	☐
Chelating Agent	☐	Sanitary	☐
Compressed Gas	☐	Sharps	☐
Dioxins,Furans	☐	Shock Sensitive	☐
Etiological	☐	Spontaneously Combustible	☐
Explosive	☐	Sulfide	☐
Herbicide	☐	Temperature Control Required	☐
Infectious Agents	☐	Temperature Sensitive	☐
Insecticide	☐	Water Reactive	☐
Lab Pack	☐		
Medical	☐		
Metal Fines	☐		

15b. Used oil? (per 40 CFR 279) Yes ☐ No ☐

Used oil mixed with hazardous waste? Yes ☐ No ☐

Total Halogens (TX) concentration? < 1000 PPM ☐ > 1000 PPM ☐

15c. PCBs? (40 CFR 761) Yes ☐ No ☐

If yes, PCB concentration? (in PPM) 0-49 ☐ 50-499 ☐ >= 500 ☐

Greater than 50 PPM source? Yes ☐ No ☐

15d. Does this material require any special handling? Yes ☐ No ☐

If yes, explain:

15e. Subject to Subpart CC(40CFR 264/5. 1080-1091, LQG>26gal,>500ppmw VOC) Yes ☐ No ☐

15f. Subject to Benzene NESHAP controls(40 CFR 61.340-358) Yes ☐ No ☐

15g. Do any exclusions/exemptions apply? Yes ☐ No ☐

If yes, describe:

15h. Generated from electroplating process? Yes ☐ No ☐

15i. Additional Comments/ Special Waste Type:

16. Transporter: Heritage Transport ☐ Other ☐ (Complete below)

Transporter Name
Address
City, State, Zip
Contact/Phone
US EPA ID No.

17. Packaging:		Size:
Bulk Liquid	☐	
Bulk Solid	☐	
Cu Yd Bag/Box	☐	
Cylinder	☐	
Drum	☐	
Tote (Metal)	☐	
Tote (Poly)	☐	

18. Volume: _____/Year _____/Shipment

19. Check or List Attachments: Lab Data ☐ MSDS ☐ Cylinder Form ☐ Packing List ☐ Other (list) ☐

20. **CERTIFICATION** *Sign and date the certification.*

I hereby certify that I am an authorized agent of the generator, and warrant on behalf of the generator, that all information submitted herein and attached documentation contains true, accurate and complete descriptions of this material. Any sample submitted for analysis or attached laboratory data is representative of the material being offered for approval. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I will notify Heritage Environmental Services, LLC or Heritage-WTI, Inc. of any changes in generator status, any information on this form, or any information on the attachments. This certification and signature apply to this form, to all attachments checked in section 19, and to the land disposal restriction notification (LDR) generated from this information.

Signature | Printed Name | Date | Company

21. **COMPLETE THIS SECTION FOR NON-HAZARDOUS MATERIAL**

21a. Is this waste a listed waste? (U, P, K, or F codes) Yes ☐ No ☐

21b. This waste is not characteristically hazardous for D001-D043 based on attached lab data (**mark LD**), attached MSDS (**mark MSDS**), or generator knowledge(**mark GK**).

D001 (Ignitability)	TCLP VOLATILES	TCLP SEMI-VOLATILES	D038 Pyridine
D002 (Corrosivity)	D018 Benzene	D023 o-Cresol	D041 2,4,5-Trichlorophenol
D003 (Reactivity)	D019 Carbon Tetrachloride	D024 m-Cresol	D042 2,4,6-Trichlorophenol
TCLP METALS	D021 Chlorobenzene	D025 p-Cresol	**HERBICIDES & PESTICIDES**
D004 Arsenic	D022 Chloroform	D026 Cresol	D012 Endrin
D005 Barium	D028 1,2 –Dichloroethane	D027 1,4-Dichlorobenzene	D013 Lindane
D006 Cadmium	D029 1,1-Dichloroethylene	D030 2,4-Dinitrotoluene	D014 Methoxychlor
D007 Chromium	D035 Methyl Ethyl Ketone	D032 Hexachlorobenzene	D015 Toxaphene
D008 Lead	D039 Tetrachloroethylene	D033Hexachlorobutadiene	D016 2,4-D
D009 Mercury	D040 Trichloroethylene	D034 Hexachloroethane	D017 2,4,5-TP(Silvex)
D010 Selenium	D043 Vinyl Chloride	D036 Nitrobenzene	D020 Chlordane
D011 Silver		D037 Pentachlorophenol	D031 Heptachlor

EXAMPLE FORM

APPENDIX D

EXAMPLE LAND DISPOSAL RESTRICTIONS NOTICE

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 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 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 Billing Document and in Item 3 of the manifest document associated with this LDR notice and certification. Enter the generator name only, not the customer name.

USEPA Identification Number: Enter the twelve (12) digit USEPA identification number from Item 1 of the manifest document associated with this LDR notice and certification.

Manifest Document Number: Enter the unique five (5) digit manifest document number assigned to Item 1 of the manifest document associated with this LDR notice and certification. Federal regulations require the generator to assign this number.

State Manifest Number: Enter the state manifest number from Item A of the manifest document associated with this LDR notice and certification. If the manifest document does not specify a state manifest number, enter "NA".

Waste-specific Information: Complete one line in the table for each EPA hazardous waste code or set of waste codes that applies to the wastestream(s) shipped on the manifest document associated with the LDR notice and certification. 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, "Page 1, 11a" or "1/11a." would indicate the wastestream specified on page 1, line 11a of the manifest document. Multiple manifest page and 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 D007 code, the D007 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 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 item. If you enter one or more of the following wastes review the Heritage Supplemental F001-F005 Spent Solvent/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
- D001-D043 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 – Circle the letters "NWW" for a non-wastewater or "WW" 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(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 D001-D043 (non-CWA system), F001 through F005, F039 and certain waste types such as decharacterized wastes, contaminated soil, 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-D043 wastes 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 UHC's. D001 wastes to be treated by incineration, fuels substitution, or

organics recovery, and certain D003 wastes will not require identification of UHC's. If the waste code entered in Column 2 requires identification of UHC's, but there are no constituents present, enter "NONE." If the waste code entered in Column 2 requires identification of UHC's and 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/F039 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 268.2(i) 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, Constituents Subject to Treatment (CST) that must be identified for contaminated soil and hazardous debris encompass the same chemical list as the UHC's. If the waste code entered in Column 2 is F001-F005 or F039, also enter the numeric chemical reference on HESLDR3, the actual chemical name to identify which F001-F005 or F039 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 F039 treatement 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 HESLDR1 if appropriate or select one of the less frequently used certifications that are provided on form HESLDR4 and may be applicable to your wastestream. On HESLDR 1, 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 decharacterized 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 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 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 the waste codes assigned to all of the wastestreams on a manifest document will not fit on the Heritage LDR Notice and Certification (HESLDR1), complete a Heritage LDR Continuation Form (HESLDR2). Enter the generator name, USEPA identification number, manifest document number and state manifest 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/F039 Leachate Form (HESLDR3)
This form is presented to assist in the completion of Column 5 of HESLDR1, is used for hazard codes D001 through D043, F001through F005, F039, Contaminated Soil, Debris, and Decharacteized Waste. You may either enter the numeric constituent reference(s) from HESLDR3 in Column 5 of HESLDR1, write in the actual name of the chemical, or complete HESLDR3 by identifying the manifest page and 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 Decharacterized 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 spent solvents on HESLDR3 if there is a mixture of these compounds and other spent solvents.

(2) F039 - Chemical constituents shown with a "(2)" in italic and bolded font on HESLDR3 are <u>not</u> F039 constituents.

(3) D001-D043 to be treated in a non-CWA system and decharacterized waste that contain UHC's. An UHC is defined at 40 CFR 268.2(i) 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, sulfide, vanadium and zinc). Constituent specific treatment standards are provided on HESLDR3. D001 wastes treated by incineration, fuels substitution, or organics recovery system does not require identification of UHC's. Only certain D003 wastes require identification of UHC's. Refer to the Subcategories included with these instructions.

(4) Management of contaminated soil, debris, or decharacterized waste may also require identification of UHC's 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 decharacterized 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 use one or more of the Supplemental Certifications on HESLDR4. If you use certification (3) or 10(a) 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 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.

Waste Code		Underlying Constituents Required?	Subcategory
D001	1.1	Y	Ignitable characteristic wastes managed in non-CWA systems (except for the 40 CFR 261.21(a)(1) High TOC Subcategory)
	1.2	N	Ignitable characteristic wastes managed by incineration, fuels substitution, or organics recovery (except for the 40 CFR 261.21(a)(1) High TOC Subcategory)
	2	N	Ignitable characteristic wastes managed in CWA Systems (except for the 40 CFR 261.21(a)(1) High TOC Subcategory)
	3	N	High TOC Ignitable Characteristic Liquids Subcategory (based on 40 CFR 261.21(a)(1)-greater than or equal to 10% total organic carbon) (Note: This Subcategory consists of nonwastewaters only)
D002	4	Y	Corrosive characteristic wastes managed in non-CWA systems
	5	N	Corrosive characteristic wastes managed in CWA systems
D003	6	N	Reactive Sulfides Subcategory (based on 40 CFR 261.23(a)(5))
	50	N	Unexploded ordnance and other explosive devices from an emergency response
	7	Y	Explosives Subcategory (based on 40 CFR 261.23(a)(6), (7) and (8))
	8	Y	Other Reactives Subcategory (based on 40 CFR 261.23(a)(1))
	9	Y	Water Reactives Subcategory (based on 40 CFR 261.23(a)(2), (3) and (4)) (Note: This Subcategory consists of nonwastewaters only)
	10	N	Reactive Cyanides Subcategory (based on 40 CFR 261.23(a)(5))
D006	11	N	Cadmium Containing Batteries Subcategory (Note: This Subcategory consists of nonwastewaters only. For D006 wastes that fit this Subcategory, enter "NA" in Column 5)
D008	12	N	Lead Acid Batteries Subcategory (Note: This Subcategory consists of nonwastewaters only. For D008 wastes that fit this Subcategory, enter "NA" in Column 5)
D009	13	N	High Mercury-Organic Subcategory (Nonwastewaters ≥260 mg/kg total mercury containing organics that are not incinerator residues)
	14	N	High Mercury-Inorganic Subcategory (Nonwastewaters ≥260 mg/kg total mercury that are inorganic, including incinerator residues and residues from RMERC)
	15.1	N	Low Mercury Subcategory (Nonwastewaters <260 mg/kg total mercury that are residues from RMERC only)
	15.2	N	Low Mercury Subcategory (Nonwastewaters <260 mg/kg total mercury that are not residues from RMERC)
	16	N	All D009 wastewaters
D004-D043	48	Y	TC waste managed in non-CWA system
	49	N	TC waste managed in CWA system
F025	17	N	Light Ends Subcategory
	18	N	Spent Filters/Aids and Desiccants Subcategory
K006	19	N	Anhydrous
	20	N	Hydrated
K069	21	N	Calcium Sulfate (Low Lead) Subcategory
	22	N	Non-Calcium Sulfate (High Lead) Subcategory
K071	23	N	Nonwastewaters residues from RMERC
	24	N	Nonwastewaters not residues from RMERC
	25	N	All K071 wastewaters
K106	26	N	Nonwastewaters ≥260 mg/kg total mercury
	27	N	Nonwastewaters <260 mg/kg total mercury residues from RMERC
	28	N	Nonwastewaters <260 mg/kg total mercury not residues from RMERC
	29	N	All K106 wastewaters
P047	30	N	4,6-Dinitro-o-cresol
	31	N	4,6-Dinitro-o-cresol salts
P065	32	N	Nonwastewaters, regardless of total mercury content, not incinerator residues and not residues from RMERC
	33	N	Nonwastewaters either incinerator residues or residues from RMERC; and ≥260 mg/kg total mercury
	34	N	Nonwastewaters residues from RMERC and <260 mg/kg total mercury
	35	N	Nonwastewaters incinerator residues and <260 mg/kg total mercury
	36	N	All P065 wastewaters
P092	37	N	Nonwastewaters, regardless of total mercury content, not incinerator residues and not residues from RMERC
	38	N	Nonwastewaters either incinerator residues or residues from RMERC; and ≥260 mg/kg total mercury
	39	N	Nonwastewaters residues from RMERC and <260 mg/kg total mercury
	40	N	Nonwastewaters incinerator residues and <260 mg/kg total mercury
	41	N	All P092 wastewaters
U151	42	N	Nonwastewaters ≥260 mg/kg total mercury
	43	N	Nonwastewaters <260 mg/kg total mercury and residues from RMERC
	44	N	Nonwastewaters <260 mg/kg total mercury and not residues from RMERC
	45	N	All U151 wastewaters
U240	46	N	2,4-D
	47	N	2,4-D salts and esters

HESLDR1

LAND DISPOSAL RESTRICTIONS (LDR)
NOTICE AND CERTIFICATION

Page ____ of ____

Generator Name:_____ EPA I.D. No.: _____

Manifest Doc. No.:_____ State Manifest No.:_____

(1) Manifest Page/ Line Item	(2) Hazardous Waste Codes [A]	(3) Wastewater Or Non Wastewater (Circle One) [B]	(4) Subcategory (if applicable) [C]	See HESLDR3	(5) Constituents Reference (Identify Chemicals, Enter "NONE" or "NA") [D]	(6) Applicable Certification (One per line) [E]
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				

[A] 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 LDR Continuation Form (HESLDR2). Review the Heritage Supplemental F001-F005 Spent Solvent/Underlying Hazardous Constituent/F039 Leachate Form (HESLDR3) and enter numeric constituent reference if one or more applicable waste codes are F001, F002, F003, F004, F005, F039, or D001-D043 or if you choose to use HESLDR3, please place an "X" in the Box.

[B] Circle either "WW" – Wastewater or "NWW" – Non-Wastewater based on the waste that is being shipped.

[C] 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.

[D] Enter "NA" for all Hazard Codes other than D001-D043, F001-F005, and F039, Contaminated Soil, Hazardous Debris, and Decharacterized Waste. For these codes or waste types, either enter the numerical chemical representation from the Heritage Supplemental F001-F005 Spent Solvent/Underlying Constituents/F039 Leachate Form (HESLDR3) or the chemical name(s). If you choose to use the form HESLDR3 please place an "X" in the Box in Column 5 and complete HESLDR3 by identifying constituents using the appropriate Manifest Page/Line Item. If there are no constituents requiring identification enter "NONE" in Column 5

[E] Choose from certifications at bottom of HESLDR1 and enter number. Supplemental certifications may be required and are provided on form HESLDR4 in the instructions. Enter only one Certification Number per line.

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 HESLDR4 and enter the appropriate certification number. For Certifications (3) and (10a), HESLDR4 must accompany HESLDR1.

(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: _____

01CH3221_I18 REV DATE 07-11-01

HESLDR2

LAND DISPOSAL RESTRICTIONS (LDR)
CONTINUATION FORM

Page ____ of ____

Generator Name:_____ EPA I.D. No.: _____
Manifest Doc. No.:_____ State Manifest No.:_____

This form is to be used only as a continuation to the Heritage LDR Notification and Certification (HESLDR1).

(1) Manifest Page/ Line Item	(2) Hazardous Waste Codes [A]	(3) Wastewater Or Non Wastewater (Circle One) [B]	(4) Subcategory (if applicable) [C]	See HESLDR3	(5) Constituents Reference (Identify or mark NONE or NA) [D]	(6) Applicable Certification [E] (One per line)
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
		WW NWW				
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		WW NWW				
		WW NWW				

[A] 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 LDR Continuation Form (HESLDR2). Review the Heritage Supplemental F001-F005 Spent Solvent/Underlying Hazardous Constituent/F039 Leachate Form (HESLDR3) and enter numeric constituent reference if one or more applicable waste codes are F001, F002, F003, F004, F005, F039, or D001-D043 or if you choose to use HESLDR3, please place an "X" in the Box in Column 5.

[B] Circle either "WW" – Wastewater or "NWW" – Non-Wastewater based on the waste that is being shipped.

[C] 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

[D] Enter "NA" for all Hazard Codes other than D001-D043, F001-F005, and F039, Contaminated Soil, Hazardous Debris, and Decharacterized Waste. For these codes or waste types, either enter the numerical chemical representation from the Heritage Supplemental F001-F005 Spent Solvent/Underlying Constituents/F039 Leachate Form (HESLDR3) or the chemical name(s). If you choose to use the form HESLDR3 please place an "X" in the Box in Column 5 and completeHESLDR3 by identifying constituents using the appropriate Manifest Page/Line Item. If there are no constituents requiring identification enter "NONE" in Column 5

[E] Choose from certifications at bottom of HESLDR1 and enter number. Supplemental certifications may be required and are provided on form HESLDR4 in the instructions. Enter only one Certification Number per line.

01CH3223_I18 Rev Date 07-11-01

HERITAGE ENVIRONMENTAL SERVICES - SUPPLEMENTAL LAND DISPOSAL RESTRICTION NOTICE
F001-F005 SPENT SOLVENTS
UNDERLYING HAZARDOUS CONSTITUENTS
F039 LEACHATE

HESLDR3
Rev 07-17-01

PAGE ____ OF ____

Generator Name _____ USEPA Identification Number:_____

Manifest Document Number _____ State Manifest Number: _____

Use this form for F001-F005 spent solvents and F039 leachate. Use this form for D001-D043 wastes, decharacterized wastes, and contaminated soils requiring identification of Underlying Hazardous Constituents ("UHC's"). For F001-F005 select only from the constituents in CAPITAL LETTERS. For F039 select any constituent except those shown in italic and bold with a "(2)." For D001-D043, contaminated soil, and decharacterized waste subject to identification of UHC's, select the appropriate constituent on this form except fluoride, sulfide, and vanadium, and zinc using the treatment standards. You have the option of placing the Identification Number for the chemical in Column 5 of HESLDR1 or checking the Box in Column 5 of HESLDR1 and completing HESLDR3 by entering the Manifest Page Number and Line Item next to the chemical on HESLDR3. If you choose to use HESLDR3 to identify constituents, it must accompany HESLDR1 with the shipment.

Manifest Page/ Line Item	Chemical Identification Number	Regulated Constituent	Wastewater (mg/L)	Nonwastewater (mg/Kg)	Manifest Page/ Line Item	Chemical Identification Number	Regulated Constituent	Wastewater (mg/L)	Nonwastewater (mg/Kg)
	52	Acenaphthylene	0.059	3.4		244	***Carbenzadim (2)***	***0.056***	***1.4***
	51	Acenaphthene	0.059	3.4		245	***Carbofuran (2)***	***0.006***	***0.14***
	53	ACETONE	0.28	160		246	***Carbofuran phenol (2)***	***0.056***	***1.4***
	54	Acetonitrile	5.6	38		83	CARBON DISULFIDE	3.8	4.8 mg/L TCLP
	55	Acetophenone	0.01	9.7		84	CARBON TETRACHLORIDE	0.057	6
	28	2-Acetylaminofluorene	0.059	140		247	***Carbosulfan (2)***	***0.028***	***1.4***
	56	Acrolein	0.29	NA		85	Chlordane (alpha and gamma isomers)	0.0033	0.26
	209	***Acrylamide (2)***	***19***	***23***		48	p-Chloroaniline	0.46	16
	57	Acrylonitrile	0.24	84		86	CHLOROBENZENE	0.057	6.0
	234	***Aldicarb sulfone (2)***	***0.056***	***0.28***		87	Chlorobenzilate	0.1	NA
	58	Aldrin	0.021	0.066		221	2-Chloro-1,3-butadiene	0.057	0.28
	43	4-Aminobiphenyl	0.13	NA		88	Chlorodibromomethane	0.057	15
	60	Aniline	0.81	14		89	Chloroethane	0.27	6
	61	Anthracene	0.059	3.4		75	bis(2-Chloroethoxy)methane	0.036	7.2
	63	Aramite	0.36	NA		76	bis(2-Chloroethyl)ether	0.033	6
	59	alpha-BHC	0.00014	0.066		90	Chloroform	0.046	6
	74	beta-BHC	0.00014	0.066		77	bis(2-Chloroisopropyl)ether	0.055	7.2
	98	delta-BHC	0.023	0.066		46	p-Chloro-m-cresol	0.018	14
	125	gamma-BHC	0.0017	0.066		29	***2-Chloroethyl vinyl ether (2)***	***0.062***	***NA***
	226	***Barban (2)***	***0.056***	***1.4***		91	Chloromethane (Methyl chloride)	0.19	30
	235	***Bendiocarb (2)***	***0.056***	***1.4***		30	2-Chloronaphthalene	0.055	5.6
	237	***Benomyl (2)***	***0.056***	***1.4***		31	2-Chlorophenol	0.044	5.7
	67	BENZENE	0.14	10		37	3-Chloropropylene	0.036	30
	72	Benz(a)anthracene	0.059	3.4		93	Chrysene	0.059	3.4
	66	***Benzal chloride (2)***	***0.055***	***6***		205	*o*-CRESOL	0.11	5.6
	69	Benzo(b)fluoranthene	0.11	6.8		38	*m*-CRESOL	0.77	5.6
	71	Benzo(k)fluoranthene	0.11	6.8		47	*p*-CRESOL	0.77	5.6
	70	Benzo(g,h,i)perylene	0.0055	1.8		284	***Cresol - Mixed Isomers (Sum of o-,m-, and p- isomers) (2)***	***0.88***	***11.2***
	68	Benzo(a)pyrene	0.061	3.4		248	***m-Cumenyl methylcarbamate (2)***	***0.056***	***1.4***
	78	Bromodichloromethane	0.35	15		97	CYCLOHEXANONE	0.36	0.75 mg/L TCLP
	80	Methyl bromide (Bromomethane)	0.11	15		211	o,p'-DDD	0.023	0.087
	44	4-Bromophenyl phenyl ether	0.055	15		40	p,p'-DDD	0.023	0.087
	155	n-BUTYL ALCOHOL	5.6	2.6		210	o,p'-DDE	0.031	0.087
	242	***Butylate (2)***	***0.042***	***1.4***		41	p,p'-DDE	0.031	0.087
	81	Butyl benzyl phthalate	0.017	28		212	o,p'-DDT	0.0039	0.087
	36	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)	0.066	2.5		42	p,p'-DDT	0.0039	0.087
	243	***Carbaryl (2)***	***0.006***	***0.14***		99	Dibenz (a,h) anthracene	0.055	8.2

1) Fluoride, selenium, sulfide, and vanadium are F039 constituents only.
2) Constituents marked "(2)" are UHC's and not F039
3) 2 Ethoxyethanol and 2-Nitropropane are F001-F005 Only
4) NA - "Not Applicable"
5) Zinc is not F039 or a UHC

01CH1X05_I4

HERITAGE ENVIRONMENTAL SERVICES - SUPPLEMENTAL LAND DISPOSAL RESTRICTION NOTICE
F001-F005 SPENT SOLVENTS
UNDERLYING HAZARDOUS CONSTITUENTS
F039 LEACHATE

HESLDR3
Rev 07-17-01

PAGE ____ OF ____

Generator Name _____ USEPA Identification Number:_____

Manifest Document Number _____ State Manifest Number: _____

Use this form for F001-F005 spent solvents and F039 leachate. Use this form for D001-D043 wastes, decharacterized wastes, and contaminated soils requiring identification of Underlying Hazardous Constituents ("UHC's"). For F001-F005 select only from the constituents in CAPITAL LETTERS. For F039 select any constituent except those shown in italic and bold with a "(2)." For D001-D043, contaminated soil, and decharacterized waste subject to identification of UHC's, select the appropriate constituent on this form except fluoride, sulfide, and vanadium, and zinc using the treatment standards. You have the option of placing the Identification Number for the chemical in Column 5 of HESLDR1 or checking the Box in Column 5 of HESLDR1 and completing HESLDR3 by entering the Manifest Page Number and Line Item next to the chemical on HESLDR3. If you choose to use HESLDR3 to identify constituents, it must accompany HESLDR1 with the shipment.

Manifest Page/ Line Item	Chemical Identification Number	Regulated Constituent	Wastewater (mg/L)	Nonwastewater (mg/Kg)	Manifest Page/ Line Item	Chemical Identification Number	Regulated Constituent	Wastewater (mg/L)	Nonwastewater (mg/Kg)
	207	Dibenz (a,e) pyrene	0.061	NA		252	***Dithiocarbamates (total) (2)***	***0.028***	***28***
	12	1,2-Dibromo-3-chloropropane	0.11	15		111	Endosulfan I	0.023	0.066
	11	1,2-Dibromoethane (Ethylene dibromide)	0.028	15		112	Endosulfan II	0.029	0.13
	100	Dibromomethane	0.11	15		113	Endosulfan sulfate	0.029	0.13
	17	m-Dichlorobenzene	0.036	6		114	Endrin	0.0028	0.13
	13	o-DICHLOROBENZENE	0.088	6		115	Endrin aldehyde	0.025	0.13
	18	p-Dichlorobenzene	0.09	6		253	***EPTC (2)***	***0.042***	***1.4***
	101	Dichlorodifluoromethane	0.23	7.2		32	***2-ETHOXYETHANOL (3)***	***NA***	***NA***
	6	1,1-Dichloroethane	0.059	6		116	ETHYL ACETATE	0.34	33
	14	1,2-Dichloroethane	0.21	6		117	ETHYL BENZENE	0.057	10
	7	1,1-Dichloroethylene	0.025	6		215	Ethyl cyanide (Propanenitrile)	0.24	360
	193	trans-1,2-Dichloroethylene	0.054	30		118	ETHYL ETHER	0.12	160
	22	2,4-Dichlorophenol	0.044	14		282	bis(2-Ethylhexyl)phthalate	0.28	28
	27	2,6-Dichlorophenol	0.044	14		119	Ethyl methacrylate	0.14	160
	23	2,4-D (2,4-Dichlorophenoxyacetic acid)	0.72	10		217	Ethylene oxide	0.12	NA
	15	1,2-Dichloropropane	0.85	18		120	Famphur	0.017	15
	94	cis-1,3-Dichloropropylene	0.036	18		121	Fluoranthene	0.068	3.4
	194	trans-1,3-Dichloropropylene	0.036	18		122	Fluorene	0.059	3.4
	103	Dieldrin	0.017	0.13		254	***Formetanate hydrochloride (2)***	***0.056***	***1.4***
	104	Diethyl phthalate	0.2	28		126	Heptachlor	0.0012	0.066
	50	***p-Dimethylaminoazobenzene (2)***	***0.13***	***NA***		127	Heptachlor epoxide	0.016	0.066
	24	2,4-Dimethyl phenol	0.036	14		291	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-HpCDD)	3.5E-05	0.0025
	105	Dimethyl phthalate	0.047	28		287	1,2,3,4,6,7,8-Heptachlorodibenzo-furan (1,2,3,4,6,7,8-HpCDF)	3.5E-05	0.0025
	106	Di-n-butyl phthalate	0.057	28		288	1,2,3,4,7,8,9-Heptachlorodibenzo-furan (1,2,3,4,7,8,9-HpCDF)	3.5E-05	0.0025
	213	1,4-Dinitrobenzene	0.32	2.3		128	Hexachlorobenzene	0.055	10
	225	4,6-Dinitro-o-cresol	0.28	160		129	Hexachlorobutadiene	0.055	5.6
	25	2,4-Dinitrophenol	0.12	160		130	Hexachlorocyclopentadiene	0.057	2.4
	26	2,4-Dinitrotoluene	0.32	140		132	HxCDDs (All Hexachlorodibenzo-p-dioxins)	6.30E-05	0.001
	281	2,6-Dinitrotoluene	0.55	28		131	HxCDFs (All Hexachlorodibenzofurans)	6.30E-05	0.001
	109	Di-n-octyl phthalate	0.017	28		133	Hexachloroethane	0.055	30
	110	Di-n-propylnitrosamine	0.4	14		134	Hexachloropropylene	0.035	30
	19	1,4-Dioxane	12	170		135	Indeno (1,2,3,-c,d) pyrene	0.0055	3.4
	106	Diphenylamine	0.92	13		136	Iodomethane	0.19	65
	158	Diphenylnitrosamine	0.92	13		137	ISOBUTYL ALCOHOL	5.6	170
	16	1,2-Diphenylhydrazine	0.087	NA		138	Isodrin	0.021	0.066
	107	Disulfoton	0.017	6.2		139	Isosafrole	0.081	2.6

1) Fluoride, selenium, sulfide, and vanadium are F039 constituents only.
2) Constituents marked "(2)" are UHC's and not F039
3) 2 Ethoxyethanol and 2-Nitropropane are F001-F005 Only
4) NA - "Not Applicable"
5) Zinc is not F039 or a UHC

01CH3005_14

HERITAGE ENVIRONMENTAL SERVICES - SUPPLEMENTAL LAND DISPOSAL RESTRICTION NOTICE
F001-F005 SPENT SOLVENTS
UNDERLYING HAZARDOUS CONSTITUENTS
F039 LEACHATE

HESLDR3
Rev 07-17-01

PAGE ____ OF ____

Generator Name _____ USEPA Identification Number:_____

Manifest Document Number _____ State Manifest Number: _____

Use this form for F001-F005 spent solvents and F039 leachate. Use this form for D001-D043 wastes, decharacterized wastes, and contaminated soils requiring identification of Underlying Hazardous Constituents ("UHC's"). For F001-F005 select only from the constituents in CAPITAL LETTERS. For F039 select any constituent except those shown in italic and bold with a "(2)." For D001-D043, contaminated soil, and decharacterized waste subject to identification of UHC's, select the appropriate constituent on this form except fluoride, sulfide, and vanadium, and zinc using the treatment standards. You have the option of placing the Identification Number for the chemical in Column 5 of HESLDR1 or checking the Box in Column 5 of HESLDR1 and completing HESLDR3 by entering the Manifest Page Number and Line Item next to the chemical on HESLDR3. If you choose to use HESLDR3 to identify constituents, it must accompany HESLDR1 with the shipment.

Manifest Page/ Line Item	Chemical Identification Number	Regulated Constituent	Wastewater (mg/L)	Nonwastewater (mg/Kg)	Manifest Page/ Line Item	Chemical Identification Number	Regulated Constituent	Wastewater (mg/L)	Nonwastewater (mg/Kg)
	275	***Triallate (2)***	0.042	1.4		64	Arsenic	1.4	5.0 mg/L TCLP
	79	Tribromomethane (Bromoform)	0.63	15		65	Barium	1.2	21mg/L TCLP
	10	1,2,4-Trichlorobenzene	0.055	19		73	Beryllium	0.82	1.22 mg/L TCLP
	2	1,1,1-TRICHLOROETHANE	0.054	6		82	Cadmium	0.69	0.11 mg/L TCLP
	4	1,1,2-TRICHLOROETHANE	0.054	6		92	Chromium (Total)	2.77	0.60 mg/L TCLP
	195	TRICHLOROETHYLENE	0.054	6		96	Cyanides (Total)	1.2	590
	124	TRICHLOROMONOFLUOROMETHANE	0.020	30		208	Cyanides (Amenable)	0.86	30
	21	2,4,5-Trichlorophenol	0.18	7.4		123	Fluoride	35	NA
	206	2,4,6-Trichlorophenol	0.035	7.4		141	Lead	0.69	0.75 mg/L TCLP
	219	2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	0.72	7.9		142	Mercury - Nonwastewater from Retort	NA	0.20 mg/L TCLP
	8	1,2,3-Trichloropropane	0.85	30		283	Mercury - All Others	0.15	0.025 mg/L TCLP
	5	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	0.057	30		152	Nickel	3.98	11 mg/L TCLP
	276	***Triethylamine (2)***	***0.081***	***1.5***		184	Selenium	0.82	5.7 mg/L TCLP
	222	tri-(2,3-Dibromopropyl) phosphate	0.11	0.1		185	Silver	0.43	0.14 mg/L TCLP
	277	***Vernolate (2)***	***0.042***	***1.4***		187	Sulfide	14	NA
	197	Vinyl chloride	0.27	6		190	Thallium	1.4	.20 mg/L TCLP
	202	XYLENES-MIXED ISOMERS	0.32	30		196	Vanadium	4.3	1.6 mg/L TCLP
	62	Antimony	1.9	1.15 mg/L TCLP			***Zinc (2)***	***2.61***	***4.3 mg/L TCLP***

1) Fluoride, selenium, sulfide, and vanadium are F039 constituents only.
2) Constituents marked "(2)" are UHC's and not F039
3) 2 Ethoxyethanol and 2-Nitropropane are F001-F005 Only
4) NA - "Not Applicable"
5) Zinc is not F039 or a UHC

01CH3005_I4

APPENDIX E

HERITAGE PERMITTED WASTECODES

Waste Code	Description
D001	Ignitable Characteristic Wastes
D002	Corrosive Characteristic Wastes.
D003	Reactive Sulfides Subcategory based on §261.23(a)(5).
D004	Wastes that are TC for arsenic based on the TCLP in SW846.
D005	Wastes that are TC for barium based on the TCLP in SW846.
D006	Wastes that are TC for cadmium based on the TCLP in SW846.
D007	Wastes that are TC for chromium based on the TCLP in SW846.
D008	Wastes that are TC for lead based on the TCLP in SW846.
D009	Wastes that are TC for mercury based on the TCLP in SW846.
D010	Wastes that are TC for selenium based on the TCLP in SW846.
D011	Wastes that are TC for silver based on the TCLP in SW846.
D012	Wastes that are TC for Endrin based on the TCLP in SW846 Method 1311.
D013	Wastes that are TC for Lindane based on the TCLP in SW846 Method 1311.
D014	Wastes that are TC for Methoxychlor based on the TCLP in SW846 Method 1311.
D015	Wastes that are TC for Toxaphene based on the TCLP in SW846 Method 1311.
D016	Wastes that are TC for 2,4-D (2,4-Dichlorophenoxyacetic acid) based on the TCLP in SW846 Method 1311.
D017	Wastes that are TC for 2,4,5-TP (Silvex) based on the TCLP in SW846 Method 1311.
D018	Wastes that are TC for Benzene based on the TCLP in SW846 Method 1311.
D019	Wastes that are TC for Carbon tetrachloride based on the TCLP in SW846 Method 1311.
D020	Wastes that are TC for Chlordane based on the TCLP in SW846 Method 1311.
D021	Wastes that are TC for Chlorobenzene based on the TCLP in SW846 Method 1311.
D022	Wastes that are TC for Chloroform based on the TCLP in SW846 Method 1311.
D023	Wastes that are TC for o-Cresol based on the TCLP in SW846 Method 1311.
D024	Wastes that are TC for m-Cresol based on the TCLP in SW846 Method 1311.
D025	Wastes that are TC for p-Cresol based on the TCLP in SW846 Method 1311.
D026	Wastes that are TC for Cresols (Total) based on the TCLP in SW846 Method 1311.
D027	Wastes that are TC for p-Dichlorobenzene based on the TCLP in SW846 Method 1311.
D028	Wastes that are TC for 1,2-Dichloroethane based on the TCLP in SW846 Method 1311.
D029	Wastes that are TC for 1,1-Dichloroethylene based on the TCLP in SW846 Method 1311.
D030	Wastes that are TC for 2,4-Dinitrotoluene based on the TCLP in SW846 Method 1311.
D031	Wastes that are TC for Heptachlor based on the TCLP in SW846 Method 1311.
D032	Wastes that are TC for Hexachlorobenzene based on the TCLP in SW846 Method 1311.
D033	Wastes that are TC for Hexachlorobutadiene based on the TCLP in SW846 Method 1311.
D034	Wastes that are TC for Hexachloroethane based on the TCLP in SW846 Method 1311.
D035	Wastes that are TC for Methyl ethyl ketone based on the TCLP in SW846 Method 1311.
D036	Wastes that are TC for Nitrobenzene based on the TCLP in SW846 Method 1311.
D037	Wastes that are TC for Pentachlorophenol based on the TCLP in SW846 Method 1311.

D038	Wastes that are TC for Pyridine based on the TCLP in SW846 Method 1311.
D039	Wastes that are TC for Tetrachloroethylene based on the TCLP in SW846 Method 1311.
D040	Wastes that are TC for Trichloroethylene based on the TCLP in SW846 Method 1311.
D041	Wastes that are TC for 2,4,5-Trichlorophenol based on the TCLP in SW846 Method 1311.
D042	Wastes that are TC for 2,4,6-Trichlorophenol based on the TCLP in SW846 Method 1311.
D043	Wastes that are TC for Vinyl chloride based on the TCLP in SW846 Method 1311.

Waste Code	**Description**
F001	The following spent halogenated solvents used in degreasing: Tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbons; all spent solvent mixtures/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F002	The following spent halogenated solvents: Tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, ortho-dichlorobenzene, trichlorofluoromethane, and 1,1,2-trichloroethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F003	The following spent non-halogenated solvents: Xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, and methanol; all spent solvent mixtures/blends containing, before use, only the above spent non-halogenated solvents; and all spent solvent mixtures/blends containing, before use, one or more of the above nonhalogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by volume) of one or more of the above non-halogenated solvents or those solvents listed in F001, F002, or F004; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.
F006	Wastewater treatment sludges from electroplating operations except from the following processes: (1) Sulfuric acid anodizing of aluminum; (2) tin plating on carbon steel; (3) zinc plating (segregated basis) on carbon steel; (4) aluminum or zinc-aluminum plating on carbon steel; (5) cleaning/stripping associated with tin, zinc and aluminum plating on carbon steel; and (6) chemical etching and milling of aluminum.
F007	Spent cyanide plating bath solutions from electroplating operations.
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process.

F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.
F012	Quenching waste water treatment sludges from metal heat treating operations where cyanides are used in the process.
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process.

Waste Code	**Description**
F024	Process wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor clean-out wastes, from the production of certain chlorinated aliphatic hydrocarbons by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution. (This listing does not include wastewaters, wastewater treatment sludges, spent catalysts, and wastes listed in § 261.31 or § 261.32.).
F025	Condensed light ends, spent filters and filter aids, and spent desiccant wastes from the production of certain chlorinated aliphatic hydrocarbons, by free radical catalyzed processes. These chlorinated aliphatic hydrocarbons are those having carbon chain lengths ranging from one to and including five, with varying amounts and positions of chlorine substitution.
F032	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that currently use or have previously used chlorophenolic formulations (except potentially cross-contaminated wastes that have had the F032 waste code deleted in accordance with § 261.35 of this chapter or potentially cross-contaminated wastes that are otherwise currently regulated as hazardous wastes (i.e., F034 or F035), and where the generator does not resume or initiate use of chlorophenolic formulations). This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol
F034	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol
F035	Wastewaters (except those that have not come into contact with process contaminants), process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use inorganic preservatives containing arsenic or chromium. This listing does not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol

F037	Petroleum refinery primary oil/water/solids separation sludge-Any sludge generated from the gravitational separation of oil/water/solids during the storage or treatment of process wastewaters and oily cooling wastewaters from petroleum refineries. Such sludges include, but are not limited to, those generated in: oil/water/solids separators; tanks and impoundments; ditches and other conveyances; sumps; and stormwater units receiving dry weather flow. Sludge generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact oncethrough cooling waters segregated for treatment from other process or oily cooling waters, sludges generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and K051 wastes are not included in this listing.
F038	Petroleum refinery secondary (emulsified) oil/water/solids separation sludge-Any sludge and/or float generated from the physical and/or chemical separation of oil/water/solids in process wastewaters and oily cooling wastewaters from petroleum refineries. Such wastes include, but are not limited to, all sludges and floats generated in: induced air flotation (IAF) units, tanks and impoundments, and all sludges generated in DAF units. Sludges generated in stormwater units that do not receive dry weather flow, sludges generated from non-contact once-through cooling waters segregated for treatment from other process or oily cooling waters, sludges and floats generated in aggressive biological treatment units as defined in § 261.31(b)(2) (including sludges and floats generated in one or more additional units after wastewaters have been treated in aggressive biological treatment units) and F037, K048, and K051 wastes are not included in this listing.

Waste Code	**Description**
F039	Leachate (liquids that have percolated through land disposed wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of this part. (Leachate resulting from the disposal of one or more of the following EPA Hazardous Wastes and no other Hazardous Wastes retains its EPA Hazardous Waste Number(s): F020, F021, F022, F026, F027, and/or F028.).
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.
K003	Wastewater treatment sludge from the production of molybdate orange pigments.
K004	Wastewater treatment sludge from the production of zinc yellow pigments.
K005	Wastewater treatment sludge from the production of chrome green pigments.
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).
K007	Wastewater treatment sludge from the production of iron blue pigments.
K008	Oven residue from the production of chrome oxide green pigments.
K009	Distillation bottoms from the production of acetaldehyde from ethylene.
K010	Distillation side cuts from the production of acetaldehyde from ethylene.
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.
K015	Still bottoms from the distillation of benzyl chloride.
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.

K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.
K018	Heavy ends from the fractionation column in ethyl chloride production.
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.
K022	Distillation bottom tars from the production of phenol/acetone from cumene.
K023	Distillation light ends from the production of phthalic anhydride from naphthalene.
K024	Distillation bottoms from the production of phthalic anhydride from naphthalene.
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.
K026	Stripping still tails from the production of methy ethyl pyridines.
K027	Centrifuge and distillation residues from toluene diisocyanate production.
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.
K030	Column bottoms or heavy ends from the combined production of trichloroethylene and perchloroethylene.
K031	By-product salts generated in the production of MSMA and cacodylic acid.
K032	Wastewater treatment sludge from the production of chlordane.
K033	Wastewater and scrub water from the chlorination of cyclopentadiene in the production of chlordane.
K034	Filter solids from the filtration of hexachlorocyclopentadiene in the production of chlordane.
K035	Wastewater treatment sludges generated in the production of creosote.
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.
K037	Wastewater treatment sludges from the production of disulfoton.
K038	Wastewater from the washing and stripping of phorate production.
K039	Filter cake from the filtration of diethylphosphorodithioic acid in the production of phorate.
K040	Wastewater treatment sludge from the production of phorate.
K041	Wastewater treatment sludge from the production of toxaphene.

Waste Code	**Description**
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.
K043	2,6-Dichlorophenol waste from the production of 2,4-D.
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.
K045	Spent carbon from the treatment of wastewater containing explosives.
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.
K047	Pink/red water from TNT operations.
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.
K049	Slop oil emulsion solids from the petroleum refining industry.
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.
K051	API separator sludge from the petroleum refining industry.

K052	Tank bottoms (leaded) from the petroleum refining industry.
K060	Ammonia still lime sludge from coking operations.
K061	Emission control dust/sludge from the primary production of steel in electric furnaces.
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).
K069	Emission control dust/sludge from secondary lead smelting. (Note: This listing is stayed administratively for sludge generated from secondary acid scrubber systems. The stay will remain in effect until further administrative action is taken. If EPA takes further action effecting this stay, EPA will publish a notice of the action in the Federal Register).
K071	Brine purification muds from the mercury cell process in chlorine production, where separately prepurified brine is not used.
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.
K083	Distillation bottoms from aniline production.
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.
K086	Solvent washes and sludges, caustic washes and sludges, or water washes and sludges from cleaning tubs and equipment used in the formulation of ink from pigments, driers, soaps, and stabilizers containing chromium and lead.
K087	Decanter tank tar sludge from coking operations.
K088	Spent potliners from primary aluminum reduction.
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.
K097	Vacuum stripper discharge from the chlordane chlorinator in the production of chlordane.
K098	Untreated process wastewater from the production of toxaphene.
K099	Untreated wastewater from the production of 2,4-D.
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.
K101	Distillation tar residues from the distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.
K103	Process residues from aniline extraction from the production of aniline.
K104	Combined wastewater streams generated from nitrobenzene/aniline production.

Waste Code	**Description**
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.
K106	Wastewater treatment sludge from the mercury cell process in chlorine production.

K107	Column bottoms from product separation from the production of 1,1-dimethyl-hydrazine (UDMH) from carboxylic acid hydrazines.
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.
K110	Condensed column overheads from intermediate separation from the production of 1,1dimethylhydrazine (UDMH) from carboxylic acid hydrazides.
K111	Product washwaters from the production of dinitrotoluene via nitration of toluene.
K112	Reaction by-product water from the drying column in the production of toluenediamine via hydrogenation of dinitrotoluene.
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene.
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine.
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salt.
K124	Reactor vent scrubber water from the production of ethylenebisdithiocarbamic acid and its salts.
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithiocarbamic acid and its salts.
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithiocarbamic acid and its salts.
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide.
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.
K141	Process residues from the recovery of coal tar, including, but not limited to, collecting sump residues from the production of coke from coal or the recovery of coke by-products produced from coal. This listing does not include K087 (decanter tank tar sludges from coking operations).
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke byproducts produced from coal.
K143	Process residues from the recovery of light oil, including, but not limited to, those generated in stills, decanters, and wash oil recovery units from the recovery of coke by-products produced from coal.
K144	Wastewater sump residues from light oil refining, including, but not limited to, intercepting or contamination sump sludges from the recovery of coke by-products produced from coal.

K145	Residues from naphthalene collection and recovery operations from the recovery of coke byproducts produced from coal.
K147	Tar storage tank residues from coal tar refining.

Waste Code	Description
K148	Residues from coal tar distillation, including but not limited to, still bottoms.
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ringchlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups, (This waste does not include still bottoms from the distillation of benzyl chloride.).
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associated with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates, and decantates) from the production of carbamates and carbamoyl oximes
K157	Wastewaters (including scrubber waters, condenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes
K158	Bag house dusts and filter/separation solids from the production of carbamates and carbamoyl oximes
K159	Organics from the treatment of thiocarbamate wastes
K161	Purification solids (including filtration, evaporation, and centrifugation solids), bag house dust and floor sweepings from the production of dithiocarbamate acids and their salts. (This listing does not include K125 or K126.)
K169	Crude oil storage tank sediment from petroleum refining operations.
K170	Clarified slurry oil storage tank sediment and /or in-line separation solid from petroleum refining operations.
K171	Spent hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic units (this listing does not include inert support media).
K172	Spent hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic units (this listing does not include inert support media).
P001	Warfarin, & salts, when present at concentrations greater than 0.3%
P002	1-Acetyl-2-thiourea
P003	Acrolein
P004	Aldrin
P005	Allyl alcohol
P006	Aluminum phosphide
P007	5-(Aminomethyl)-3-isoxazolol
P008	4-Aminopyridine
P009	Ammonium picrate
P010	Arsenic acid

P011	Arsenic pentoxide
P012	Arsenic trioxide
P013	Barium cyanide
P014	Thiophenol (Benzene thiol)
P015	Beryllium powder
P016	Dichloromethyl ether (Bis(chloromethyl)ether
P017	Bromoacetone
P018	Brucine
P020	2-sec-Butyl-4,6-dinitrophenol (Dinoseb)
P021	Calcium cyanide
P022	Carbon disulfide

Waste Code	**Description**
P023	Chloroacetaldehyde
P024	p-Chloroaniline
P026	1-(o-Chlorophenyl)thiourea
P027	3-Chloropropionitrile
P028	Benzyl chloride
P029	Copper cyanide
P030	Cyanides (soluble cyanide salts and complexes)
P031	Cyanogen
P033	Cyanogen chloride
P034	2-cyclohexyl-4,6-dinitrophenol
P036	Dichlorophenylarsine
P037	Dieldrin
P038	Diethylarsine
P039	Disulfoton
P040	0,0-Diethyl O-pyrazinyl phosphorothioate
P041	Diethyl-p-nitrophenyl phosphate
P042	Epinephrine
P043	Diisopropylfluorophosphate (DFP)
P044	Dimethoate
P045	Thiofanox
P046	alpha,alpha-Dimethylphenethylamine
P047	4,6-Dinitro-o-cresol, & salts
P048	2,4-Dinitrophenol
P049	Dithiobiuret
P050	Endosulfan
P051	Endrin
P054	Aziridine
P056	Fluorine

P057	Fluoroacetamide
P058	Fluoroacetic acid, sodium salt
P059	Heptachlor
P060	Isodrin
P062	Hexaethyl tetraphosphate
P063	Hydrogen cyanide
P064	Isocyanic Acid, ethyl ester
P065	Mercury fulminate
P066	Methomyl
P067	2-methyl- aziridine
P068	Methyl hydrazine
P069	2-Methyllactonitrile
P070	Aldicarb
P071	Methyl parathion
P072	1-naphthalenyl- thiourea
P073	Nickel carbonyl
P074	Nickel cyanide
P075	Nicotine, & salts
P076	Nitric oxide
P077	p-Nitroaniline
P078	Nitrogen dioxide
P081	Nitroglycerine

Waste Code	**Description**
P082	N-Nitrosodimethylamine
P084	N-Nitrosomethylvinylamine
P085	Octamethylpyrophosphoramide
P087	Osmium tetroxide
P088	Endothall
P089	Parathion
P092	Mercury, (acetato-O)phenyl-
P093	Phenylthiourea
P094	Phorate
P095	Phosgene
P096	Phosphine
P097	Famphur
P098	Potassium cyanide
P099	Potassium silver cyanide
P101	Ethyl Cyanide (Propanenitrile)
P102	Propargyl alcohol
P103	Selenourea

P104	Silver cyanide
P105	Sodium azide
P106	Sodium cyanide
P108	Strychnine, & salts
P109	Tetraethyldithiopyrophosphate
P110	Tetraethyl lead
P111	Tetraethyl pyrophosphate
P112	Tetranitromethane (R)
P113	Thallic oxide
P114	Thallium selenite
P115	Thallium(I) sulfate
P116	Thiosemicarbazide
P118	Trichloromethanethiol
P119	Ammonium vanadate
P120	Vanadium pentoxide
P121	Zinc cyanide
P122	Zinc phosphide Zn3P2, when present at concentrations greater than 10%
P123	Toxaphene
P127	Carbofuran.
P128	Mexacarbate.
P185	Tirpate
P188	Physostigmine salicylate.
P189	Carbosulfan.
P190	Metolcarb.
P191	Dimetilan.
P192	Isolan.
P194	Oxamyl.
P196	Manganese dimethyldithiocarbamate.
P197	Formparanate.
P198	Formetanate hydrochloride.
P199	Methiocarb.
P201	Promecarb
P202	m-Cumenyl methylcarbamate.

Waste Code	**Description**
P203	Aldicarb sulfone.
P204	Physostigmine.
P205	Ziram
U001	Acetaldehyde
U002	Acetone
U003	Acetonitrile

U004	Acetophenone
U005	2-Acetylaminofluorene
U006	Acetyl chloride
U007	Acrylamide
U008	Acrylic acid
U009	Acrylonitrile
U010	Mitomycin C
U011	Amitrole
U012	Aniline
U014	Auramine
U015	Azaserine
U016	Benz[c]acridine
U017	Benzal chloride
U018	Benz[a]anthracene
U019	Benzene
U020	Benzenesulfonic chloride
U021	Benzidine
U022	Benzo(a)pyrene
U023	Benzotrichloride
U024	Bis(2-Chloroethoxy)ether
U025	Bis(2-Chloroethyl)ether
U026	Chlornaphazin
U027	Bis(2-Chloroisopropyl)ether
U028	Bis(2-ethylhexyl)phthalate
U029	Methyl bromide (Bromomethane)
U030	4-Bromophenyl phenyl ether
U031	n-Butyl alcohol
U032	Calcium chromate
U033	Carbon oxyfluoride
U034	Trichloroacetaldehyde (Chloral)
U035	Chlorambucil
U036	Chlordane
U037	Chlorobenzene
U038	Chlorobenzilate
U039	p-Chloro-m-cresol
U041	Epichlorohydrin (1-Chloro-2,3-epoxypropane)
U042	2-Chloroethyl vinyl ether
U043	Vinyl chloride
U044	Chloroform
U045	Chloromethane (Methyl chloride)
U046	Chloromethyl methyl ether
U047	2-Chloronaphthalene

U048	2-Chlorophenol
U049	4-Chloro-o-toluidine, hydrochloride

Waste Code	Description
U050	Chrysene
U051	Creosote
U052	Cresol (Cresylic acid)
U053	Crotonaldehyde
U055	Cumene
U056	Cyclohexane
U057	Cyclohexanone
U058	Cyclophosphamide
U059	Daunomycin
U060	DDD
U061	DDT
U062	Diallate
U063	Dibenz[a,h]anthracene
U064	Dibenzo[a,i]pyrene
U066	1,2-Dibromo-3-chloropropane
U067	Ethylene dibromide (1,2-Dibromoethane)
U068	Dibromomethane
U069	Di-n-butyl phthalate
U070	o-Dichlorobenzene
U071	m-Dichlorobenzene
U072	p-Dichlorobenzene
U073	3,3'-Dichlorobenzidine
U074	1,4-Dichloro-2-butene
U075	Dichlorodifluoromethane
U076	1,1-dichloro-ethane
U077	1,2-dichloro-ethane
U078	1,1-Dichloroethylene
U079	1,2-Dichloroethylene
U080	Methylene chloride
U081	2,4-Dichlorophenol
U082	2,6-Dichlorophenol
U083	1,2-dichloro- propane
U084	1,3-Dichloropropene
U085	1,2:3,4-Diepoxybutane
U086	N,N'-Diethylhydrazine
U087	O,O-Diethyl S-methyl dithiophosphate
U088	Diethyl phthalate

U089	Diethylstilbesterol
U090	Dihydrosafrole
U091	3,3'-Dimethoxybenzidine
U092	Dimethylamine
U093	p-Dimethylaminoazobenzene
U094	7,12-Dimethylbenz[a]anthracene
U095	3,3'-Dimethylbenzidine
U096	alpha,alpha-Dimethylbenzylhydroperoxide
U097	Dimethylcarbamoyl chloride
U098	1,1-Dimethylhydrazine
U099	1,2-Dimethylhydrazine
U101	2,4-Dimethylphenol
U102	Dimethyl phthalate

Waste Code	**Description**
U103	Dimethyl sulfate
U105	2,4-Dinitrotoluene
U106	2,6-Dinitrotoluene
U107	Di-n-octyl phthalate
U108	1,4-Dioxane
U109	1,2-Diphenylhydrazine
U110	Dipropylamine
U111	Di-n-propylnitrosamine
U112	Ethyl acetate
U113	Ethyl acrylate
U114	Ethylenebisdithiocarbamic acid, salts & esters
U115	Ethylene oxide
U116	Ethylene thiourea
U117	Ethyl ether
U118	Ethyl methacrylate
U119	Ethyl methanesulfonate
U120	Fluoranthene
U121	Trichloromonofluoromethane
U122	Formaldehyde
U123	Formic acid
U124	Furan
U125	Furfural
U126	Glycidylaldehyde
U127	Hexachlorobenzene
U128	Hexachlorobutadiene
U129	Lindane

U130	Hexachlorocyclopentadiene
U131	Hexachloroethane
U132	Hexachlorophene
U133	Hydrazine
U134	Hydrogen fluoride
U135	Hydrogen sulfide
U136	Cacodylic acid
U137	Indeno[1,2,3-cd]pyrene
U138	Iodomethane
U140	Isobutyl alcohol
U141	Isosafrole
U142	Kepone
U143	Lasiocarpine
U144	Lead acetate
U145	Lead phosphate
U146	Lead subacetate
U147	Maleic anhydride
U148	Maleic hydrazide
U149	Malononitrile
U150	Melphalan
U151	Mercury
U152	Methacrylonitrile
U153	Methanethiol
U154	Methanol

Waste Code	**Description**
U155	Methapyrilene
U156	Methyl chlorocarbonate
U157	3-Methylcholanthrene
U158	4,4'-Methylenebis(2-chloroaniline)
U159	Methyl ethyl ketone
U160	Methyl ethyl ketone peroxide
U161	Methyl isobutyl ketone
U162	Methyl methacrylate
U163	N-methyl-N'-nitro-N-nitrosoguanidine
U164	Methylthiouracil
U165	Naphthalene
U166	1,4-Naphthoquinone
U167	1-Naphthalenamine
U168	2-Naphthalenamine
U169	Nitrobenzene

U170	p-Nitrophenol
U171	2-Nitropropane (I,T)
U172	N-Nitrosodi-n-butylamine
U173	N-Nitrosodiethanolamine
U174	N-Nitrosodiethylamine
U176	N-Nitroso-N-ethylurea
U177	, N-methyl-N-nitrosourea
U178	N-Nitroso-N-methylurethane
U179	N-nitrosopiperidine
U180	N-Nitrosopyrrolidine
U181	5-Nitro-o-toluidine
U182	Paraldehyde
U183	Pentachlorobenzene
U184	Pentachloroethane
U185	pentachloronitrobenzene
U186	1,3-Pentadiene
U187	Phenacetin
U188	Phenol
U189	Phosphorus sulfide
U191	2-Picoline
U192	Pronamide
U193	1,3-Propane sultone
U194	n-Propylamine
U196	Pyridine
U197	p-Benzoquinone
U200	Reserpine
U201	Resorcinol
U202	Saccharin, & salts
U203	Safrole
U204	Selenium dioxide
U205	Selenium sulfide
U206	Streptozotocin
U207	1,2,4,5-Tetrachlorobenzene
U208	1,1,1,2-Tetrachloroethane
U209	1,1,2,2-Tetrachloroethane

Waste Code	**Description**
U210	Tetrachloroethylene
U211	Carbon tetrachloride
U213	Tetrahydrofuran
U214	Thallium(I) acetate

U215	Thallium(I) carbonate
U216	Thallium(I) chloride
U217	Thallium(I) nitrate
U218	Thioacetamide
U219	Thiourea
U220	Toluene
U221	Toluenediamine
U222	o-Toluidine hydrochloride
U223	Toluene diisocyanate
U225	Bromoform (Tribromomethane)
U226	Ethane, 1,1,1-trichloroethane
U227	1,1,2-Trichloroethane
U228	Trichloroethylene
U234	1,3,5-Trinitrobenzene
U235	T\tris(2,3-dibromopropyl) phosphate
U236	Trypan blue
U237	Uracil mustard
U238	Urethane (Ethyl carbamate)
U239	Xylenes
U240	2,4-D(2,4-Dichlorphenoxyacetic acid)
U243	Hexachloropropylene
U244	Thiram
U246	Cyanogen bromide
U247	Methoxychlor
U248	Warfarin, & salts, when present at concentrations of 0.3% or less
U249	Zinc phosphide Zn3P2, when present at concentrations of 10% or less
U271	Benomyl.
U278	Bendiocarb
U279	Carbaryl
U280	Barban.
U328	o-Toluidine
U353	p-Toluidine
U359	2-Ethoxyethanol
U364	Bendiocarb phenol
U367	Carbofuran phenol
U372	Carbendazim
U373	Propham
U387	Prosulfocarb
U389	Triallate
U394	A2213
U395	Diethylene glycol, dicarbamate.
U404	Triethylamine.

U408	2,4,6-Tribromophenol
U409	Thiophanate-methyl
U410	Thiodicarb
U411	Propoxur