ATTACHMENT C

WASTE CHARACTERISTICS AND WASTE ANALYSIS PLAN

[270.A (270.14(b)(2)(3))]

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WASTE CHARACTERISTICS

1.0 INTRODUCTION

Clean Harbors Arizona, LLC (CHA) operates a commercial hazardous waste storage, transfer, and treatment facility. The Facility consolidates bulks and repackages a variety of hazardous and non-hazardous wastes onsite and stores/transfers hazardous wastes for shipment to approved off-site reuse, treatment and/or disposal facilities. Wastes are typically transported in bulk tanker, roll-off bins, and containers (e.g., 55-gallon drum, cylinder) and may be gaseous, liquid, semisolid, and/or solid in nature.

This Waste Analysis Plan (WAP) has been developed to meet the requirements of 40 CFR 264.13 and AAC Title 18-8. The plan is a part of the RCRA Part B permit application. A copy of the approved plan, along with any approved revisions, will be kept on file at the facility and will be available for inspection.

Waste management decisions are made by qualified CHA employees. Throughout this WAP, there are references to third parties that are used to provide services to CHA. CHA personnel are responsible and accountable for all waste management decisions as referenced in the WAP.

This plan documents the analyses required to safely transfer, treat, or store, all wastes accepted at the facility. This plan describes the following:

- Acceptable and unacceptable wastes.
- The methodology for accepting a generators waste stream prior to arriving at the Facility;

- The methodology for determining the acceptability of a generator's waste stream – Conformance/Verification Analysis of Incoming Waste.

The term "RCRA hazardous waste" refers herein to a waste considered hazardous by the U.S. Environmental Protection Agency (EPA) as defined by 40 CFR 261. A non-RCRA hazardous waste" or "non-hazardous waste" is a waste not identified as being hazardous according to 40 CFR 261.

For the purpose of this plan, the term "hazardous waste manifest" means any EPA approved written or electronic document or record used to document the movement or transfer of hazardous waste from the generator to a Treatment, Storage, or Disposal facility.

The forms shown within this WAP are typical forms currently used by the Facility. These forms may change to equivalent or alternative forms based upon changes in the regulations, customer needs, facility operations, company policy or other needs. In addition, these forms or documentation may be received, stored, transmitted and/or retrieved electronically in addition to, or in lieu of, hard (paper) copy.

With regards to this WAP, "laboratory" means the CHA laboratory or any third party laboratory contracted to perform analysis.

CHA analyses are per approved EPA or comparable methods. As EPA develops new analytical methods, these methods may be used, if applicable, in demonstrating compliance without the appropriate regulation.

1.1 Hazardous Waste Activities Regulated Under RCRA

The Facility accepts hazardous waste from off-site generators, and generates hazardous waste from the process of handling these wastes. The RCRA-regulated handling activities for hazardous waste include:

- Storage of hazardous waste in containers and RCRA regulated tanks. These wastes are regulated in Arizona as RCRA, per Arizona Administrative Code (A.A.C.) Title 18, Chapter 8 and will be managed accordingly.

- Consolidation of compatible wastes in containers and tanks prior to off-site transportation, treatment, storage and/or disposal.

A complete description of the RCRA-regulated hazardous waste operations listed above is presented in Section 1.2, below.

Typical waste categories which are accepted for hazardous waste storage and/or consolidation include the following:

- Acids;
- Alkalines;
- Flammables/Organics - Wastes which exhibit a flash point of less than 140°F, halogenated and non-halogenated solvents, pure organics, and/or aqueous wastes containing organic materials;
- Oxidizers;
- Poisons/Pesticides - Waste poisons, pesticides, and acute toxics;
- Reactives.

The following types of wastes will **not** be accepted at the Facility:

- Nuclear Regulatory Commission (NRC) regulated "Source" Radioactive Wastes

- Thermally unstable at ambient temperatures
- Department of Transportation (DOT) "Class 1" Explosives
- Toxic Substances Control Act (TSCA) Polychlorinated biphenyls (PCBs) in quantities greater than 500 gallons at a concentration greater than 50 ppm

(Note: Per 40 CFR Part 761.3; a commercial storer is not required to obtain a permit for volumes under 500 gallons.

"*Commercial storer of PCB waste* means the owner or operator of each facility that is subject to the PCB storage unit standards of §761.65(b)(1) or (c)(7) or meets the alternate storage criteria of §761.65(b)(2), and who engages in storage activities involving either PCB waste generated by others or that was removed while servicing the equipment owned by others and brokered for disposal. The receipt of a fee or any other form of compensation for storage services is not necessary to qualify as a commercial storer of PCB waste. A generator who only stores its own waste is subject to the storage requirements of §761.65, but is not required to obtain approval as a commercial storer. If a facility's storage of PCB waste generated by others at no time exceeds a total of 500 gallons of liquid and/or non-liquid material containing PCBs at regulated levels, the owner or operator is a commercial storer but is not required to seek EPA approval as a commercial storer of PCB waste. Storage of one company's PCB waste by a related company is not considered commercial storage. A "related company" includes, but is not limited to: a parent company and its subsidiaries; sibling companies owned by the same parent company; companies owned by a common holding company; members of electric cooperatives; entities within the same Executive agency as defined at 5 U.S.C. 105; and a company having a joint ownership interest in a facility from which PCB waste is generated (such as a jointly owned electric power generating station) where the PCB waste is stored by one of the co-owners of the facility. A "related company" does not include another voluntary member of the same trade association. Change in ownership or title of a generator's facility, where the generator is storing PCB waste, does not make the new owner of the facility a commercial storer of PCB waste."

PCB's will be stored in CSA I. This area meets the requirements of 761.65 and as such has sufficient containment. Additionally, PCB's are compatible with a variety of chemicals, including the acids and acid compatibles designated for CSA I.

- Arizona regulated "Biohazardous Medical Waste" as defined by Arizona Administrative Code (AAC) R18-13-1401.

1.2 Description of RCRA Hazardous Waste Activities

1.2.1 Storage of Hazardous Waste in Containers and Tanks

The Facility may accept hazardous wastes which are not amenable to the consolidation or bulking processes. Such wastes are accepted for storage and subsequent transfer to an off-site waste treatment, storage or disposal facility. These wastes are sometimes referred to as "storage and transfer" wastes. Storage and transfer wastes are typically received in either bulk (e.g., tanker, roll-off, intermodal) or non-bulk (e.g., 55-gallon drums, lab packs, cylinders) containers.

The list of hazardous waste codes that the Facility may accept for storage is presented in **Table C-1.**

1.2.2 Consolidation of Hazardous Waste

The Facility may perform consolidation of wastes it receives from off-site in bulk or non-bulk containers. Such consolidation is performed whenever practical to minimize the costs and maximize the efficiencies associated with off-site transportation, treatment and disposal. Consolidation includes pumping, dumping, bulking, and repackaging and/or pouring off lab pack containers.

The hazardous waste codes that the Facility may accept for consolidation are the same waste codes it accepts for storage. These waste codes are presented in **Table C-1.**

1.2.3 Consolidation (Bulking) of Hazardous Waste for Disposal

The Facility receives and bulks hazardous wastes that will be sent to properly licensed waste management facilities, typically an incinerator or landfill. The types of wastes to be bulked or consolidated by the Facility through this operation typically include: acids and bases, organic

liquids, oils, high or low BTU lean waters, debris, contaminated soil, or absorbent. The liquids are consolidated into the tanks or directly onto bulk transport vehicles for transport from the facility. The solids are consolidated into roll-off bins for transport from the facility. The liquid consolidation or bulking process will be with liquids that are compatible as demonstrated with the compatibility or bucket test. The bulking activity does not change the associated profile of the bulked waste and is not to be construed as treatment. The bulked waste may be shipped in containers or tanker trucks.

1.2.4 Site Generated Waste

The Facility generates hazardous waste from the handling and verification of off site generated waste as it is processed through the facility. The wastes generated by the facility include:

- Laboratory sample residues and containers (liquids and solids) that the facility has bulked or lab packed in standard sized drums;
- Clean up residues and washwaters;
- Personal protective equipment; and
- VOC laden carbon.

If there is a leak from a single container within an area, the repacked container will be similarly labeled as the original container. In the event multiple containers containing compatible materials from different sources leak or spill simultaneously, the mixture will be collected and recontainerized or, if compatible pumped into a tank. The newly generated waste will be characterized and managed according to appropriate requirements for the waste. The waste will be properly labeled and stored until final disposition is determined.

Site generated wastes will be characterized and/or recertified annually using appropriate knowledge of the process generating the waste and/or analytical testing. Knowledge may include

information from the initial generator profile(s) (IE: spill cleanup) or a waste generated from a standard process (IE: spent carbon used for vapor control). Wastes will be analyzed if appropriate knowledge cannot be used to characterize the waste. Based on that characterization, each unique site generated waste is assigned a unique profile listing CHA as the generator. This information is used to determine LDR requirements. These wastes are packaged into DOT containers approved for the waste, labeled and tracked with a bar code number as are all wastes received from off-site generators. Containers are placed into storage areas with compatible wastes as described in sections 2.6 and 2.8. Sections 2.7, 2.8 and 2.9 apply to site generated wastes.

2.0 WASTE ANALYSIS PLAN

2.1 General

This Waste Analysis Plan (WAP) has been developed to document the procedures which shall be used to determine the identity and acceptability of waste materials intended for storage, treatment, and/or transfer at Clean Harbors Arizona, LLC. The WAP applies to RCRA regulated wastes. The Facility will also comply with RCRA time limitations per 40 CFR Part 268.50(b) for managing non-RCRA wastes on-site. Specifically, the WAP includes:

- Prequalification procedures to determine the acceptability of a particular waste stream pursuant to facility permit conditions and operating capabilities prior to shipment of the waste to the Facility;

- Incoming load verification procedures, including conformance (i.e., "fingerprint") testing to verify that the delivered waste matches the accompanying manifest, pre-acceptance documentation, and the conditions of the facility permit; and

- Process operations procedures to maintain safe and appropriate methods of storage, bulking, and consolidation of waste within the facility.

Specific WAP requirements and procedures are grouped into one of two general waste categories based on the particular storage, treatment, or handling operations that the waste code/stream is subjected to while at the Facility. The general waste categories include:

1. **Storage and Transfer** - Wastes in this category are accepted, stored, and ultimately shipped to an offsite treatment, disposal, or reuse facility. Wastes accepted for hazardous waste bulking and wastes that are consolidated on-site are considered storage and transfer wastes. Storage and transfer wastes are subject to prequalification and conformance (or "fingerprint") testing. Any waste which undergoes bulking or consolidation is also subject to chemical compatibility testing prior to undertaking the bulking or consolidation activity.

2. **Unique Wastes** – Unique wastes are waste streams that are comprised of identifiable commercial products which are not mixed with other characteristic or listed hazardous wastes. For purposes of this WAP, the following types of wastes are classified as unique wastes:

    - "Lab packs" in their pure commercial form and original container (e.g. a bottle of acid from a laboratory cleanout);

    - Single-substance spill material (e.g., absorbent, debris);

    - Commercial products or chemicals that are off-specification, outdated, unused, contaminated, or banned. This also includes products voluntarily removed from the

market place by manufacturer or distributor in response to allegation of adverse health effects associated with product use;

- Controlled substances regulated by the Federal Government including illegal drugs and/or materials from clandestine labs;

- Manufactured articles which are visually identifiable through an inspection process (e.g., thermometers, batteries, electronic waste, fluorescent light tubes, filters, wire, piping, etc.);

- Containers of hardened solids or highly viscous wastes which cannot be sampled;

- "RCRA-empty" (per 40 CFR 261.7) containers, drums, barrels, cans, bags, liners, etc. from waste commercial products or chemicals;

- Debris as defined by 40 CFR Part 268.2;

- Aerosols cans and other compressed gases; and

- Any wastes which may present special hazards to facility employees if they are sampled (e.g., friable asbestos, air reactive).

Unique wastes are subject to special prequalification and conformance procedures as described throughout this plan.

2.2 Waste Prequalification Procedures

Waste prequalification (profiling) is a rigorous process performed to determine the acceptability of a generator's waste stream for storage and treatment prior to arrival at the facility. The Waste Prequalification process begins with the generator's submittal of a completed and signed Generator Waste Material Profile Sheet, GWMPS or "profile" (as shown in **Appendix C-I**) or equivalent form and any other accompanying information (e.g., waste analysis data, Material Safety Data Sheet (MSDS), etc.). CHA is responsible to ensure that waste will only be accepted if the generator has an approved profile; CHA uses the Clean Harbors Central Profile Group (CPG) located in Norwell, MA as the primary group to review and approve profiles for wastes coming to CHA. CPG consists of trained scientists and/or engineers with experience with RCRA, TSCA, DOT and other federal, state and local regulations and hazardous and non-hazardous waste determinations. As an alternative, the CHA General Manager or designee may review and approve profiles. The Facility has the final determination of whether or not a particular waste is approved for management at the facility.

CPG personnel review the submitted profile to ensure it has been thoroughly completed by the generator and that the waste, as described by the generator, is consistent with information provided in the profile and any other information accompanying the profile (e.g., laboratory analysis, MSDS, etc.). Generators will use a combination of generator knowledge and/or laboratory analysis to complete the profile(s). If the profile is missing information, the information submitted conflicts with, or contradicts, the generator's description of the waste stream, additional information is requested to complete the waste determination, and/or a representative sample is required to more fully characterize the waste stream, CPG or facility personnel will contact the waste generator and request the additional information. Analysis may be provided by the generator or a representative sample may be submitted to a subcontract laboratory for analysis. The generator is responsible to collect the representative sample if requested.

Information provided by the generator may include:

- Laboratory analysis of a representative sample
- Description of the process that generated the waste
- Applicable waste codes for purposes of complying with LDR requirements
- Applicable LDR treatment standards
- Facility specific process flow diagram of the process generating the waste
- Chemical makeup of all ingredients or materials used in the process generating the waste
- List of constituents which the generator knows or has reason to believe are byproducts or side reactions to the process that produces the waste
- MSDS and/or product label of substances used in a process that generates the waste
- Data obtained from sampling and analysis of wastes generated by the same process
- Data obtained from literature regarding waste produced from the same process
- Documentation of product specifications based on input materials and output products

If generator knowledge is provided, CPG will evaluate the appropriateness and adequacy for approval purpose. While it is not practical to detail every example of acceptable generator knowledge, CPG will consider if the information is appropriate and if not, will ask the generator to clarify or provide additional information.

Example: The generator submits the profile based on knowledge of a "tank cleanout". CPG review would consider this information insufficient and request additional information. Appropriate additional information would include what chemical(s) the tank contained before cleanout and/or the applicable process flow that includes the tank.

CPG may require the generator to submit a representative sample for each waste stream. If a sample is provided, the generator shall be required to certify (on the GWMPS form) that the sample is representative of the waste stream under consideration.

The representative sample will, if requested, be analyzed for the parameters identified in **Table C-2**. At the discretion of CPG and/or the facility, the sample may also be tested for one or more supplemental parameters listed in **Table C-3** to verify or expand upon the database. The selection of supplemental parameters shall be based on evaluating the waste in light of the ultimate off-site reuse, treatment or disposal option under consideration. Samples will be analyzed per methods requiring ADHS certification, as required.

CPG shall review the GWMPS (or equivalent) form; any supporting documentation provided by the generator and any analytical results and discuss the wastestream with the Facility to determine the acceptability of the waste for storage and transfer.

All information submitted by the generator (including the profile, analysis and/or applicable generator knowledge) will be retained by CHA. The information will be available either by access to an electronic image database or by fax of hard copies. Electronic profiles and signatures may be used instead of paper copy.

Once sufficient information is available to determine whether the waste has been properly and thoroughly characterized by the generator, CPG or facility personnel will then determine whether the waste stream is acceptable for management at the facility. This decision will be made after consideration of a number of factors including, but not necessarily limited to:

- A comparison of the waste code(s) the wastestream carries and the waste codes that the Facility is permitted to accept for storage and treatment;
- The mode of waste transportation (e.g., bulk tanker) or non-bulk (55-gallon drum, lab pack, etc.) container, the storage and treatment capabilities of the facility and the frequency of waste shipment; and

- Whether the waste is subject to any special regulatory requirements (e.g., the waste is subject to regulation under the Benzene NESHAP requirements) that could prohibit its management or restrict the ways in which it can be managed at the facility.

The WIN system includes a report of all profiles designated for approval at CHA. CHA personnel will run the report monthly to document review of profiles designated for approval. Any profile that CHA denies approval will be expired and will not be reactivated. The monthly report will be kept in the operating log in electronic or hard copy format.

Once a waste profile has been approved, a profile number will be issued and the profile information will be maintained by CHA. This will be performed by CPG as the primary vendor used for the approval process. The waste profile and all associated information will be scanned into an imaging database to be used as operating log documentation. Employees at the facility can access profile information, at any time, using Clean Harbors' electronic database or they can request a faxed copy of the profile from CPG.

Upon determination that a waste stream is acceptable for management at the facility, The generator will be provided with a written or electronic notice which states that CHA has been issued all necessary licenses and permits to accept the waste stream(s) under consideration. The notice shall be provided to the generator prior to, or at the time of shipment of the waste to the Facility. Copies of all notices to generators will be maintained electronically on-site or immediately available to the Facility by facsimile.

The prequalification procedures shall be followed prior to, or upon arrival, of the initial shipment of a waste stream to the facility. The prequalification procedures shall be repeated whenever: (a) the generator notifies CHA that the waste has changed; or (b) The Facility has reason to suspect

that the hazardous waste received is not as described in the prequalification documentation or manifest accompanying the shipment.

Every profile will automatically expire after 12 months. Generators will be notified of the annual expiration date when initially approved and will be notified again when the profile expires. The generator must resubmit the profile for approval after expiration before any waste can be shipped. This can be done on-line or via hard copy submittal. The WIN system tracks approval and expiration dates.

2.3 Waste Receiving Procedures

The following describes the process the facility will use to accept a shipment of hazardous waste. Upon arrival of a waste shipment, the Facility will review the accompanying manifest and Land Disposal Restriction (LDR) documentation for completeness, waste identification information (e.g., EPA waste codes, written description) including quantity, approved profile number and any special handling instructions. Containers will be counted to verify container piece count and visually inspected for container integrity, proper labeling and marking.

2.3.1 Lab Packs

Clean Harbors' lab-pack chemists or other approved hazardous waste contractors conduct lab pack pre-qualification at the site of generation. Clean Harbors' lab-pack chemists are Hazwoper 40 hour trained. During the waste identification and lab packing process, personnel compare the EPA hazardous waste codes of the chemicals proposed for handling with the list of wastes codes on the facility's approved RCRA Part A form (see also **Table C-1**). Any waste code, which does not appear on the Part A form is not authorized for acceptance and storage at the facility, and shall be rejected.

In cases where the lab pack container(s) are pre-packed by the generator, the Facility will require that prior to the delivery of the waste, the generator provide a copy of the packing slip, any MSDSs, or other product literature concerning the wastes for each lab pack container. Employees at the Facility will compare the packing slip to the list of waste codes the facility is permitted to accept. Any containers with waste codes that are listed on the packing slip, but do not appear on the Facility's Part A form, will be deemed unacceptable at the facility, facility personnel will follow the procedures described in Section 2.5.

Upon arrival at the Facility, each load of lab packed waste shall be counted and inspected for proper labeling and marking to verify the container piece count and the waste identification information (e.g., EPA waste codes, written description) on the accompanying manifest and Land Disposal Restriction documentation. The contents of lab packs which were not packaged by Clean Harbors personnel or other qualified individuals shall be inspected to verify the accuracy of the packing slip (drum inventory) and ensure that proper waste packing techniques were followed. The contents of lab packs that were packaged by Clean Harbors' personnel will not be inspected; however, Facility personnel will review the packing slip to ensure that the materials listed are acceptable for on-site storage and/or consolidation.

A packing slip (inventory) for each lab pack container must accompany the hazardous waste manifest and must also be attached to the outside of a lab pack container. The information on a packing slip will include the number of containers, size of containers, and associated waste codes for each container.

2.4 Conformance Testing

Upon arrival at the facility, conformance (or "fingerprint") analysis will be performed to provide a general characterization of all wastes, (except for lab packs and unique wastes as described

below) and insure that the wastes shipped matches the waste approved under the prequalification process.

Bulk loads and containers shall be placed in a designated staging area where they are opened, with the exception of certain types of wastes which should not or cannot be opened, and visually inspected for color, odor, physical state, (solid, semisolid, liquid), layering, and free liquids to confirm that the waste shipped matches the general physical description of the waste approved during the prequalification process. Free liquid confirmation is based on visual observation. Visual (but negligent) moisture will not typically be detected as liquid with a paint filter test. If there is any question, a paint filter test will be used to determine if liquids are present. A paint filter test may be used as a supplemental test to determine the presence or absence of liquids per EPA method 9095B.

Containers are staged in a CSA area, tankers are staged on the tanker truck loading/unloading pad next to the tank farm and rolloffs are staged in the Rolloff containment area near the Operations office trailer. (Refer to Facility Plan drawing – FP1) Containers shall be opening only when evaluated for conformance testing and/or sampling. These containers will be placed in the respective designated areas only after compatibility per section 2.6.1 has been verified. The visual inspection shall be documented. See **Appendix C-V** for an example form.

Lab Packs will not be subject to conformance testing at the facility. The Facility shall rely on the packing slip review procedures outlined in Section 2.3.1 above to confirm that the waste as shipped matches the waste approved during the prequalification process.

Unique wastes are waste streams comprised of identifiable commercial products which are not mixed with other characteristic or listed hazardous wastes. The receiving process described in Section 2.3 above shall be used to confirm that the waste as shipped matches the waste approved during the prequalification process and therefore shall not be subject to conformance testing at

the facility. Containers of unique waste are managed with the same procedures as described in this document including bar code labeling, storage in area with compatible wastes and tracking.

The General Manager may waive sampling and analysis of containers which should not or cannot be opened where the pre-acceptance information is sufficient to ensure compliance with permit conditions or operational constraints and any one of the following conditions exist:

- Obtaining a sample poses an unnecessary hazard of acute or chronic exposure of Facility employees to carcinogenic, mutagenic, neoplastigenic, teratogenic, or sensitizing materials; or

- The material may react violently with air or moisture; or

- Sampling may result in a "release" (e.g., compressed gas cylinder); or

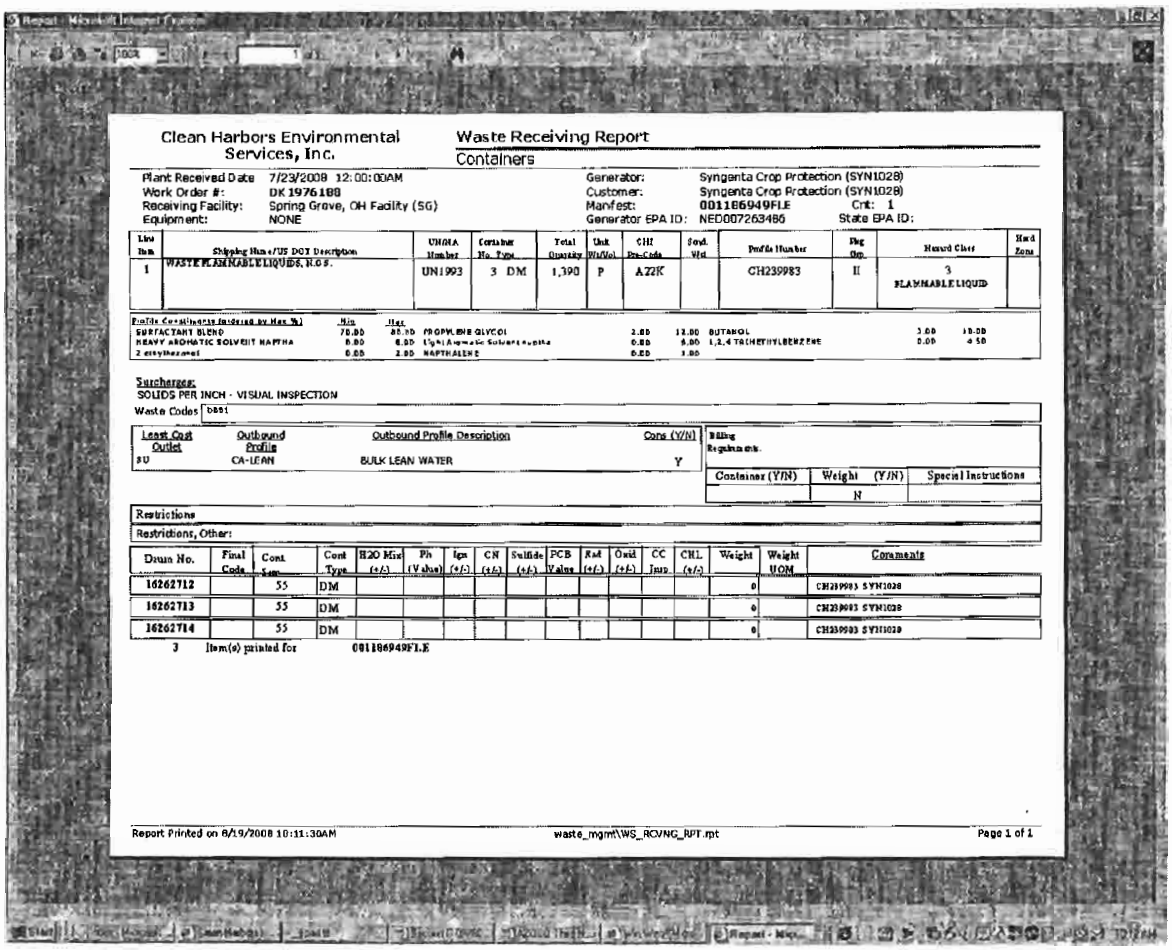
- The material's odor poses a public nuisance when sampled. If the waste is malodorous and the odor would be expected to extend beyond the property boundary it will not be opened. Otherwise the container will be opened and sampled ; or

- The nature of the contents is known in sufficient and reliable chemical and physical detail that sampling and analysis is not warranted (e.g., out of date commercial products, waste from a remediation project); or

- A sample cannot be reasonably obtained (e.g., filter cartridges, large pieces of contaminated debris, manufactured articles, etc.).

If sampling does not occur, the Facility will rely on the waste receiving procedures described in Section 2.3 above. If sampling is waived, it will be documented on the receiving report log. An

example log is noted below. The person receiving waste is required to initial the receiving report log.



Clean Harbors Environmental Services, Inc.

Waste Receiving Report
Containers

Plant Received Date: 7/23/2008 12:00:00AM
Work Order #: DK 1976188
Receiving Facility: Spring Grove, OH Facility (SG)
Equipment: NONE

Generator: Syngenta Crop Protection (SYN1028)
Customer: Syngenta Crop Protection (SYN1028)
Manifest: 001186949FLE Cnt: 1
Generator EPA ID: NED007263486 State EPA ID:

Line Item	Shipping Name/US DOT Description	UN/NA Number	Container No. Type	Total Quantity	Unit Wt/Vol	CHI Pre-Code	Seqd. Wtd	Profile Number	Pkg Grp.	Hazard Class	Haz Zone
1	WASTE FLAMMABLE LIQUIDS, N.O.S.	UN1993	3 DM	1,190	P	AZ2K		CH239983	II	3 FLAMMABLE LIQUID	

Profile Constituents (ordered by Max %)	Min	Max		Min	Max		Min	Max
SURFACTANT BLEND	70.00	80.00	PROPYLENE GLYCOL	2.00	12.00	BUTANOL	3.00	10.00
HEAVY AROMATIC SOLVENT NAPTHA	8.00	8.00	Light Aromatic Solvent Naptha	0.00	8.00	1,2,4 TRIMETHYLBENZENE	0.00	4.50
2 ethylhexanol	0.00	2.00	NAPTHALENE	0.00	1.00			

Surcharges:
SOLIDS PER INCH - VISUAL INSPECTION
Waste Codes: D001

Least Cost Outlet	Outbound Profile	Outbound Profile Description	Cons (Y/N)
SU	CA-LEAN	BULK LEAN WATER	Y

Billing Requirements

Container (Y/N)	Weight (Y/N)	Special Instructions
	N	

Restrictions
Restrictions, Other:

Drum No.	Final Code	Cont. Size	Cont Type	H2O Mix (+/-)	Ph (Value)	Ign (+/-)	CN (+/-)	Sulfide (+/-)	PCB Value	Rad (+/-)	Oxid (+/-)	CC Insp.	CHL (+/-)	Weight	Weight UOM	Comments
16262712		55	DM											0		CH239983 SYN1028
16262713		55	DM											0		CH239983 SYN1028
16262714		55	DM											0		CH239983 SYN1028

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If no discrepancies are noted, the waste may be accepted at the Facility for storage. If any waste material is deemed unacceptable, the Facility will follow the procedures set forth in Section 2.5, below.

The waste conformance parameters for hazardous wastes include the parameters identified in **Table C-2** and are listed below:

- Physical description
- pH screen
- Water solubility/reactivity
- Ignitability screen
- Reactive cyanide screen
- Reactive sulfide screen
- Oxidizer Screen
- Radioactivity Screen

The conformance testing results shall be compared to the prequalification data to verify the identity of the material. If the fingerprint data matches the prequalification information, the wastes shall be deemed acceptable for storage and/or bulking. In the event that the conformance screening is inconclusive or identifies any potential discrepancies the General Manager, Operations Manager, Compliance Manager, Receiving Foreman and/or Receiving Chemist may elect to perform one or more of the supplemental analyses described in **Table C-3** to provide a more accurate evaluation of the incoming waste. CHA will conduct only the following supplemental analyses on-site:

- pH per method 9040C
- Specific gravity per ASTM D5057-90
- Paint filter per method 9095B
- Flash point per method 1030 or 1010A

All other supplemental analyses will be performed at an ADHS certified laboratory.

In the event the conformance testing or the supplemental analyses identifies potential discrepancies, the Facility will address potential waste discrepancies as described in Section 2.5, below.

2.4.1 Frequency of Conformance Testing

Each incoming bulk load shall be sampled and analyzed for the conformance testing parameters described above.

For containers where sampling has not been waived, the Facility may at a minimum:
(a) collect samples from 10% of the containers of the same waste stream (i.e., wastes from the same generator and the same waste profile) on a shipment and analyze each sample individually;
(b) collect samples from up to ten (10) containers of the same waste on the shipment and combine the samples into one (1) composite sample for analysis; Samples from containers that may be composited are representative samples from each container. (The representative sample collected from each container will be the same volume and type. These samples will be composited and uniformly mixed before any analysis); or
(c) collect samples from each container shipped and analyze each container sample individually.

Each incoming non-bulk container shipment, with the exception of lab packs and other unique wastes, shall be sampled and analyzed as previously described. Samples from containers of the same waste stream and the same shipment may be composited for analysis.

2.5 General Waste Acceptance Criteria

The CHA General Manager or that person's designee is responsible for making the final decision on final waste acceptance. Designee's include: Compliance Manager, Operations Manager, Receiving Foreman and/or Receiving Chemist. Waste is considered "accepted" after the container(s) have been sampled, appropriately analyzed per the WAP and the waste is deemed "conforming". Conformance with prequalification results means that, in the opinion of the Facility personnel identified in this section, the waste which arrives at the facility is substantially similar in physical character and chemical composition to the waste stream that was approved

during the waste prequalification procedures and is suitable for on-site storage and/or consolidation. Acceptance is documented either by the electronic log and/or paper records. An example of the log and paper record is included in Section 2.4. Nonconforming waste must complete the resolution process per the WAP before the waste is "accepted". Incoming wastes arriving on-site will be fingerprinted within seventy two (72) hours after arrival. (Does not include weekends or holidays not worked)

In deciding whether to accept an incoming waste shipment, Facility personnel shall consider the following criteria as appropriate:

- Accuracy of GWMPS information;
- Pre-qualification technical information including MSDS, analytical data, etc.;
- Physical characteristics of the waste based on a visual inspection of the container and its contents;
- Conformance testing results and any supplemental analysis performed;
- Piece counts, waste descriptions, container labeling or marking, USEPA waste codes listed on the accompanying manifest;
- Accuracy and completeness of the Land Disposal Restriction documentation; and
- Professional experience and judgment of the CHA General Manager, Compliance Manager, Operations Manager, Receiving Foreman and/or Receiving Chemist

2.5.1 Non-Conformance and Rejections

Non-conformance between a waste which arrives at the facility and its prequalification analysis or profile may be "minor" or "major". Minor non-conformance could include, but not necessarily be limited to, differences between the packing group, UN number, or hazard class of the waste as described on the manifest or a failure to provide the correct USDOT shipping description for the waste so long as the characteristics of the waste match the profile. This section describes minor changes to shipping documents (manifests) to correct DOT shipping information. The corrected shipping document is the documentation that is kept in the operating record. Minor non-conformance issues are corrected on the manifest by the CHA General Manager, Compliance Manager, Operations Manager, Receiving Foreman and/or Receiving Chemist. Corrections such as these may or may not require prior approval of the generator. CHA will document a summary of the change including the date, name of person performing the change and what was changed. This may be kept electronically or in hard copy format.

Major non-conformance is a difference in the waste type of a waste that arrives at the facility and its prequalification analysis or profile. Major non-conformance could include, but not necessarily be limited to, improper waste classification (e.g., the manifest describes the waste as "Waste Corrosive Liquid", but the profile describes the waste as "Waste Flammable Liquid") or the manifest contains a waste code that is not listed on the profile for that waste stream.

Major non-conformance is addressed by contacting the generator and obtaining the correct information for the respective issue. Depending on the nature of the corrections, this may result in correction of the manifest and/or amendments to the waste profile or creation of a new waste profile. Manifest corrections will be made by Facility personnel, upon approval by the generator, who will provide the correct information in the appropriate section of the manifest. Amendments to waste profiles will require written approval from the generator or re-submittal of a new or amended GWMPS or equivalent to the Facility.

Major non-conformance may also be considered a "significant discrepancy" in waste type. "Significant discrepancies" include:

- For non-bulk shipments, any variation in piece count between the number of containers on a load as-manifested and the number of containers received;

- For bulk loads, a 10% variation between the weight of the load as-manifested and the weight of the load as-received.

For all loads, obvious differences between the chemical and physical characteristics as referenced in **Table C-6**, Waste Conformance Discrepancies, of a waste as-manifested and waste as-received that may be identified by visual observation, analysis or both. Such differences could include but not be limited to, a solvent waste classified solely as an acidic waste, or toxic constituents not reported on the manifest.

The regulations require the generator to properly classify its waste. In the event the Facility discovers a discrepancy between the prequalification description of the waste and the waste conformance testing, the Facility will contact the generator and attempt to resolve the discrepancy. If the discrepancy is resolved to the Facility's satisfaction, the Facility will accept the waste. CHA cannot force a generator to change or add waste codes or modify a USDOT proper shipping description. In the event the discrepancy cannot be resolved, the Facility will seek the generator's approval to reject the waste to an alternate facility.

It is important to note that not all non-conformance issues will be resolved. Unresolved non-conforming wastes are identified when knowledge and/or analytical data identifies the presence of unanticipated contaminants or characteristics which result in one or more of the following:

- The waste meets the description of an EPA waste code that is not on the list of authorized storage and transfer codes in **Table C-1**;

- The waste presents chemical compatibility issues for storage; and/or

- The waste is one for which Clean Harbors has not established any arrangements with an ultimate waste management facility that has authorization to accept such waste.

In addition to the above criteria for non-conformance, lab packs may be rejected if the wastes listed on the packing list do not match those contained in the lab pack.

Additional criteria that could create a non-conforming situation for an incoming bulk waste would be if:

- The waste contains TSCA-regulated concentrations of PCB's; or

- The waste contains one (1) or more of the Inorganic Metal bearing Hazardous Waste codes and the waste: (a) contains cyanide or other underlying hazardous constituents (UHCs) in concentrations in excess of the Land Disposal Restriction treatment standards for the UHCs; or (b) is a contaminated, combustible material (e.g., wood, paper, cloth, etc.)

In the event the Facility cannot reach agreement with the generator concerning the resolution of a discrepancy the waste will be returned to the generator or sent to an alternate TSDF. Any "significant discrepancy" that is not resolved with the generator within fifteen (15) days of the waste's arrival at the Facility will result in Clean Harbors Arizona, LLC submitting an unresolved significant discrepancy letter to ADEQ and, if applicable, the generator's state. The

Facility will resolve all waste discrepancies or non-conformance issues (as defined in this Section) within (30) thirty days of the acceptance date or the waste will be rejected.

2.6 Process Operation and Compatibility Testing

2.6.1 Storage/Transfer Wastes

Prior to placing containers of hazardous waste, non-hazardous waste and/or products into a storage unit, facility personnel (Operations Manager, Shipping Coordinator, Facility Technicians, Foreman and/or Receiving Chemist) shall assess the compatibility of the wastes and/or products with the storage unit materials of construction and with wastes and/or products already stored therein. Compatibility of the contents of containers within a storage area shall be evaluated using the criteria described in 49 CFR 174.81 – DOT Segregation Table for Hazardous Materials and/or Appendix V to Part 264 and/or the American Society for Testing and Materials (ASTM) publication "Proposed Guide for Estimating the Incompatibility of Selected Hazardous Waste based on Binary Chemical Reactions". These documents can be found in Appendix C-VI. Containers that are potentially incompatible may be stored in the same containment area as long as containment pallets are used.

Prior to undertaking any waste mixing or commingling activities, Facility personnel (Operations Manager, Shipping Coordinator, Facility Technicians, Foreman and/or Receiving Chemist) shall utilize 40 CFR Appendix V to 264 – Examples of Potentially Incompatible Waste, 49 CFR and/or 178.81- Segregation Table for Hazardous Materials and a compatibility test known as the "Bucket Test" to determine waste compatibility as well as compatibility with the container. To perform the "Bucket Test", small quantities of the materials to be consolidated will be mixed based on the actual ratios of the material present and the mixture observed for signs of reaction (e.g., heat generation, smoke or flame, off-gassing, polymerization, etc.). If there is any

evidence of a reaction, the materials will be deemed unsuitable for consolidation at the existing ratio. If no reaction occurs, the materials will be deemed compatible and suitable for consolidation. Appendix C-IV contains a Standard Operating Procedure for the Bucket Test.

Documentation of the compatibility test will be kept on a manual log. The log will indicate which containers or tank contents (by bar code number or tank number) are mixed and what if any reaction per the procedure is noted.

2.6.2 Unique Wastes

2.6.2.1 Lab Packs

Four basic handling operations exist which may be performed to lab packs received at the Facility in order to facilitate off-site treatment and disposal.

1. **Consolidation** - A "closed-container" activity which does not involve any actual mixing of waste streams and refers to the repackaging of individual containers (bottles, jars, etc.) of chemically compatible wastes into a common lab pack container. Compatibility is determined through the knowledge of the chemicals (e.g., label information, MSDS's, profile data) and use of standard chemical compatibility charts/references.

2. **Repackaging** - An "open-container" operation in which the contents of a single container of a hazardous waste are placed into another container of the same size (e.g., from a glass bottle into a polyethylene bottle) or divided into smaller quantities (e.g., 1-gallon container of liquid split into four 1-quart containers). Repackaging does not involve the mixing of waste streams, and only clean/unused containers are used as the receiving container.

3. **Pouring Off** - An "open-container" operation in which chemically compatible hazardous wastes from small individual containers (e.g., vials, jars, bottles, etc.) are poured/mixed into a common container such as a 55-gallon drum or the onsite tanks.

4. **Bulking** -An "open-container" operation in which hazardous and non-hazardous liquids or solids in drums, bags, or other containers are aggregated into a roll-off container, tank or tanker truck.

Lab packs shall be subject to the compatibility testing described in Section 2.6.1 prior to any handling activity which involves the pouring-off or mixing of the lab pack chemicals.

2.6.2.2 Other Unique Wastes

The compatibility of the contents of a container of Unique Waste with hazardous wastes already in a storage area shall be assessed prior to placing the container into that storage area. Facility personnel will review the manifest, GWMPS form, MSDS, the guidelines described in 40 CFR Part 264, Appendix V, or other information available to determine any potentially compatible storage area.

2.6.3 Frequency of Testing

Compatibility testing as described above shall be conducted prior to the pumping of liquids into a bulk storage tank, and prior to any mixing or consolidation activity conducted as part of an authorized waste handling operation.

2.7 Analytical Considerations

2.7.1 Test Methods

Table C-2 through C-4 lists the standard and screening test methods to be used in analyzing samples retrieved under this Plan. Analysis performed by facility personnel will be the primary methodology used for confirmation of wastes received by the Facility. **Appendix C-III** provides a detailed description of the in-house waste screening methods used for confirmatory analysis. Analyses shall be performed by the Facility, other Clean Harbors' analytical laboratories, or qualified independent laboratories. Any analytical results needed for off-site purposes will utilize the services of a laboratory certified to perform the EPA standard methodology.

2.7.2 Sampling Methods

Any waste sampling that is required under this Plan shall be performed by qualified Facility personnel or approved testing laboratories retained by Clean Harbors. All of the procedures and equipment used by the Facility for sampling purposes will conform with American Society for Testing Materials (ASTM) and/or US EPA protocol ("Test Methods for Evaluation of Solid Waste", SW-846) to ensure the retrieval of reliable and representative samples. Specific sampling procedures shall be dependent upon the nature of the material and upon the type and size of container. A summary of the sampling methods and equipment is presented in **Table C-5.**

The types of containers requiring sampling may include portable units such as: drums, tanks, roll-off bins, and tank trucks; or stationary units such as bulk storage tanks. The sampling devices are selected depending on the size and type of the container, and on the specific material involved.

Sampling of small containers (i.e., drums, cartons and small tanks) varies with the nature of the waste material. For flowable materials, a Coliwasa unit or rigid tube is used to obtain a full vertical section sample. For non-flowable wastes, portions are taken from a vertical section, including any obvious layers.

Large containers of liquids are sampled with a Coliwasa or tubing to obtain a vertical section, or by weighted bottle or bomb sample to allow for sampling at various depths. Light, dry powders and granules are sampled with a transparent tube to obtain a vertical core. Heavier solids are sampled by coring with heavy tubing. Tank sediments are sampled from a bottom sampling valve when not accessible from the top access ports. All tank trucks shall be sampled from top access ports.

2.8 Additional Requirements for Ignitable, Reactive or Incompatible Wastes

Facility prequalification and waste acceptance procedures have been developed to identify the key chemical and physical characteristics of a waste stream. A critical part of these evaluations is to assess chemical compatibility of material so that the Facility can safely store, treat, and/or consolidate the stream under consideration with other accepted wastes.

As described in Section 2.6, Facility personnel shall conduct compatibility assessments prior to any mixing or commingling operation involving two or more different waste streams. Hazardous wastes will not be placed in unwashed containers that previously held an incompatible material or waste. A storage container holding a hazardous waste that is incompatible with any waste or other materials stored nearby in other containers will be separated from the other materials or protected from them by means of a dike, wall, secondary containment, or pallet. Containers holding hazardous waste that is ignitable or reactive will be located at least 50 feet from the facility's property line. Water reactive lab packs will be profiled and labeled as water reactive, so

receiving personnel will know these wastes are reactive upon reciept. Water reactive wastes will be stored in Work Station I. No additional wastes will be stored in this area while water reactive wastes are being stored.

2.9 Storage and Treatment Units and Listed Wastes

The Facility is permitted to bulk and store a wide variety of listed and characteristic hazardous wastes and non-hazardous wastes in containers and tanks. In accordance with USEPA's "Mixture" and "Derived From" Rules, any time a listed waste stream is stored or treated, the storage or treatment system becomes "contaminated" with the listed waste code and all wastes which are subsequently managed within that system must carry the listed waste code forever.

Clean Harbors adopts the following procedures to allow it to "drop" a listed waste code from storage or cleaning process:

- **Empty Containers** - the Facility removes waste from containers and upon completion of the process either: (a) removes all wastes from the container that can be removed using practices commonly employed to remove material from that type of container and no more than one (1) inch of residue still remains in the container; or (b) no more than 0.3% by weight of the total capacity remains in the container.

- **Storage/Bulking in Tanks** - If a tank is used to manage listed waste codes and that tank is subsequently emptied as demonstrated through record keeping or visual confirmation, the listed waste codes that were previously in the tank do not need to be carried for any wastes that are subsequently placed into the tank (unless those listed codes are also present in the waste that is subsequently placed in the tank).

2.10 Requirements for the Land Disposal Restrictions (LDR)

Pursuant to 40 CFR 268.7, CHA is responsible for maintaining copies of the Land Disposal Restrictions (LDR) documentation certified by the original generator and accompanying either each shipment of the hazardous waste stream into the facility or the initial shipment of the hazardous waste stream into the facility (depending on whether the generator state and TSDF state allow use of a 1-time only LDR form as allowed in 40 CFR 268.7). The Facility is also responsible for preparing and keeping LDR documentation for each load of hazardous waste generated at and shipped from the facility. The content and format requirements for the various types of LDR documents are summarized below.

2.10.1 Incoming Waste Streams

Prior to formal acceptance at the facility, all incoming waste shipments shall be subject to prequalification analysis and facility acceptance fingerprinting as well as check for compliance with the LDR documentation requirements specified in 40 CFR 268.7. The actual documentation must meet one (or possibly more if the shipment is a mixed waste stream) of the following three formats:

1. **Generator Notification** -- Either the initial shipment of a waste stream or each incoming shipment which contains a hazardous waste that does not meet the applicable treatment standard must be accompanied by a "generator notification" that has been completed and signed by the generator. The notification must include the following information:

    - EPA Hazardous Waste No(s);
    - Treatability group (i.e., wastewater or non-wastewater);
    - USEPA hazardous waste codes

- Applicable treatment standard;
- Waste analysis information, where available; and
- Reference to the manifest number

2. **Generator Certification** -- If the generator determines (either through actual testing or by applying knowledge of the waste) that the shipment meets the applicable treatment standards, the generator notification must also include a "generator certification" statement identical to the statement s provided in 40 CFR Part 268.

3. **Variances/Exemptions** -- If the shipment contains restricted wastes which are subject to a case-by-case extension, a no-migration petition, or a nationwide variance, the generator notification must also include the date that the waste becomes subject to the prohibitions.

To aid in consistency, Clean Harbors has developed standardized forms for use of incoming hazardous waste shipments. Copies of sample LDR forms are provided in **Appendix C-II**. Any LDR form is acceptable so long as it complies with 40 CFR § 268.7.

2.10.2 Outgoing Hazardous Waste Streams

Under RCRA, Clean Harbors Arizona, LLC is considered the "generator" of all hazardous wastes shipped from the facility. As a generator of hazardous wastes, the Facility will provide LDR documentation for each shipment of restricted hazardous waste shipped from Clean Harbors Arizona to an off-site treatment or disposal facility.

There are two types of hazardous waste which may be shipped from the site:

- Wastes that are actually produced by the Facility through an onsite handling of wastes (e.g., PPE, absorbent, protective floor coverings, etc.), analytical procedures, or other associated activities (e.g., VOC carbon); or

- Waste originally accepted for storage/transfer only and that are transferred to an off-site facility in their original container or in consolidated (bulked) form.

The Facility shall determine the LDR status of waste streams produced through onsite processes by applying its knowledge of the waste or by conducting actual analytical testing prior to shipment. In the case of consolidated waste streams or shipments of waste in original containers, Clean Harbors will rely solely on the information provided by the original generator (as verified by Clean Harbors' waste acceptance procedures) to determine the specific LDR status of the waste.

The Facility will provide all appropriate LDR documentation (using CHA Forms LDR1 or other such forms designated by the receiving TSD facility) for each outgoing shipment of restricted hazardous waste or for the initial shipment of a hazardous waste stream to an off-site facility if that facility's state recognizes and allows the use of the one-time only LDR notification.

In general, any hazardous waste which does not meet the applicable LDR treatment standard shall be accompanied by Form LDR1, or equivalent. Wastes which are determined through testing or knowledge to meet applicable treatment standards shall be accompanied a generator notification/certification form (e.g., Form GC-1).

2.11 Specific Waste Management Methods

The Facility assumes that the waste in the hazardous waste tanks and all equipment that contacts waste entering or leaving the tanks contains an organic concentration of at least 10% by weight and therefore manages the equipment according to the rules of 264 Subpart BB.

The Facility stores hazardous waste in containers and tanks subject to 264 Subparts I and J and manages the wastes as though the volatile organic concentration at the point of waste origination is greater than 500 parts per million by weight (ppmw) and therefore manages the tanks and containers to the air emission standards of 264 Subpart CC.

The Facility does not have any process vents that are regulated by the air emission standards for 264 Subpart AA.

2.12 Records Retention

CHA will retain a copy of all manifests, notifications, certifications, and other LDR documentation (for both incoming and outgoing shipments) on file as part of the operating record at the facility for at least three (3) years.

The Facility will record, as it becomes available, and maintain in the operating record until closure of the facility, records of each hazardous waste received, treated and or stored at the facility. The records for each hazardous waste shall include a description of each waste by its common name, the EPA hazardous waste number(s) which apply to the waste, the process generating the waste, the physical form (i.e.,. solid, liquid, sludge, or gas), the manifested weight or volume, the handling method code as well as the dates of treatment and/or storage. In

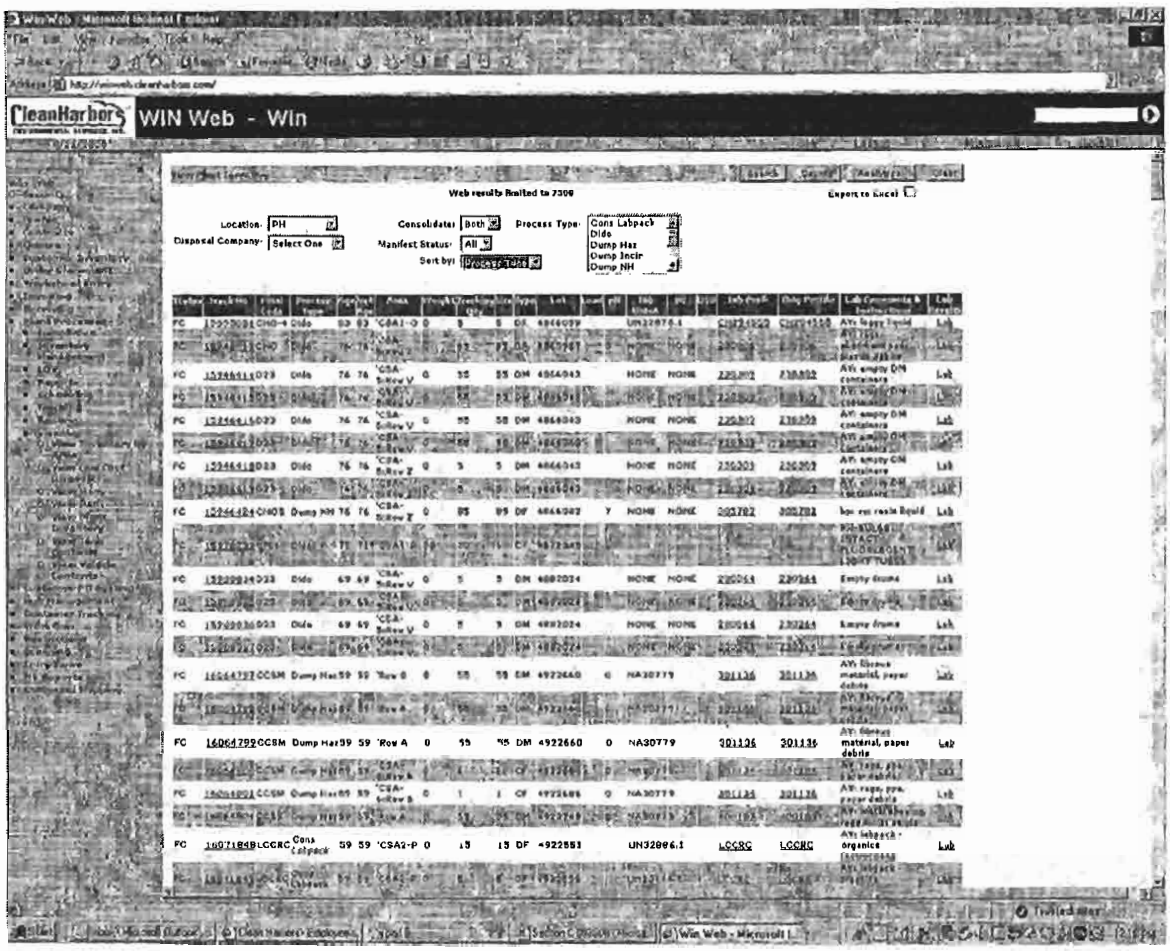
addition, the results of waste analysis and waste determinations performed to comply with this waste analysis plan shall be recorded and maintained in the operating record until closure of the facility. Documents could be stored on site or in the electronic database. Information in the electronic database is readily available for print, if requested.

CHA utilizes an electronic tracking system (WIN) that is capable of tracking and managing waste inventory on a real time basis. The backbone of the system is based on each container, regardless of size or hazard characterization (RCRA hazardous and non hazardous) is labeled and tracked using a unique bar code number. When wastes arrive at the facility, each shipment is entered into the WIN system, so the system is capable of tracking containers before final acceptance. The label includes the following information:

- Date received
- Reference to generator profile number
- Identifies as RCRA hazardous or non hazardous
- Unique number with scanning bar code
- DOT hazard identification
- Primary constituent based on the profile

WIN is capable of tracking all container activity (hazardous and non hazardous), including inventory location and on-site process activity (example: pump a container into a tank). When the container or tank is shipped offsite for final management, WIN tracks the outbound manifest number associated with each container and/or tank volume. While the waste is in storage at the CHA facility, the View Plant Inventory report identified in the screen snapshot below is run on a daily basis by the General Manager or his designee. This report includes the information needed to effectively manage operations activity including waste types and storage quantities for waste storage areas. This report allows proactive planning to ensure the facility does not exceed permitted storage limits. If storage limits were exceeded, ADEQ would be notified by the Facility General Manager or Compliance Manager within 48 hours. Receipts would cease and

waste would be shipped offsite as soon as possible. Within 5 days CHA will submit to the ADEQ a written report detailing the actual amount that the facility exceeded permitted storage limits and the actions taken to remedy the issue as well as corrective actions taken to prevent recurrence.



View Plant Inventory can be exported to an excel spreadsheet and sorted. The report contains the following information per container:

- Tracking number

- Waste process code – "final code"
- Process type
- Age – Number of days on-site since received
- Storage area and row
- Container size and/or weight
- pH (if applicable)
- DOT UN/NA number
- DOT hazard class
- Generator profile number
- Lab analytical results and comments

CHA is responsible to maintain the system tracking data. The servers are maintained offsite at the Clean Harbors corporate office in Norwell Massachusetts. This system is maintained on two identical servers operating independently and is backed up daily. The backup tapes are kept at a remote third location to ensure system quality. Each month, all containers are physically inventoried and rescanned to check against the system records. The General Manager or his designee is responsible to review and reconcile any discrepancies if the monthly scan does not match the system records.

TABLE C-1

WASTES, ASSOCIATED HAZARDS, AND BASIS FOR HAZARDOUS DESIGNATION

TABLE C-1

WASTES, ASSOCIATED HAZARDS, AND BASIS FOR HAZARDOUS DESIGNATION

EPA Hazardous Waste No.	Chemical	Hazard	Basis
D001	Ignitable Wastes	Ignitable	Characteristic of Ignitability
D002	Corrosive Wastes	Corrosive	Characteristic of corrosivity
D003	Reactive Waste	Reactive	Characteristic of Reactivity
D004	Arsenic Bearing Waste	Toxic	Characteristic of TCLP
D005	Barium Bearing Waste	Toxic	Characteristic of TCLP
D006	cadmium Bearing Waste	Toxic	Characteristic of TCLP
D007	Chromium Bearing Waste	Toxic	Characteristic of TCLP
D008	Lead Bearing Waste	Toxic	Characteristic of TCLP
D009	Mercury Bearing Waste	Toxic	Characteristic of TCLP
D010	Selenium Bearing Waste	Toxic	Characteristic of TCLP
D011	Silver Bearing Waste	Toxic	Characteristic of TCLP
D012	Waste with Endrin	Toxic	Characteristic of TCLP
D013	Waste with Lindane	Toxic	Characteristic of TCLP
D014	Waste with Methoxychlor	Toxic	Characteristic of TCLP
D015	Waste with Toxaphene	Toxic	Characteristic of TCLP

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
D016	Waste with 2,4-D	Toxic	Characteristic of TCLP
D017	Waste with 2,4,5-TP	Toxic	Characteristic of TCLP
D018	Waste with Benzene	Toxic	Characteristic of TCLP
D019	Waste with Carbon Tetrachloride	Toxic	Characteristic of TCLP
D020	Waste with Chlordane	Toxic	Characteristic of TCLP
D021	Waste with Chlorobenzene	Toxic	Characteristic of TCLP
D022	Waste with Chloroform	Toxic	Characteristic of TCLP
D023	Waste with O-Cresol	Toxic	Characteristic of TCLP
D024	Waste with m-Cresol	Toxic	Characteristic of TCLP
D025	Waste with p-Cresol	Toxic	Characteristic of TCLP
D026	Waste with Cresol	Toxic	Characteristic of TCLP
D027	Waste with 1,4-Dichlorobenzene	Toxic	Characteristic of TCLP
D028	Waste with 1,2-Dichloroethane	Toxic	Characteristic of TCLP
D029	Waste,with 1,11-Dichloroethylene	Toxic	Characteristic of TCLP

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
D030	Waste with 2,4-Dinitrotoluene	Toxic	Characteristic of TCLP
D031	Waste with Heptachlor (and its hydroxide)	Toxic	Characteristic of TCLP
D032	Waste with Hexachlorobenzene	Toxic	Characteristic of TCLP
D033	Waste with Hexachloro-1,3-butadiene	Toxic	Characteristic of TCLP
D034	Waste with Hexachloroethane	Toxic	Characteristic of TCLP
D035	Waste with Methyl ethyl ketone	Toxic	Characteristic of TCLP
D036	Waste with Nitrobenzene	Toxic	Characteristic of TCLP
D037	Waste with Pentachlorophenol	Toxic	Characteristic of TCLP
D038	Waste with Pyridine	Toxic	Characteristic of TCLP
D039	Waste with Tetrachloroethylene	Toxic	Characteristic of TCLP
D040	Waste with Trichloroethylene	Toxic	Characteristic of TCLP
D041	Waste with 2,4,5-Trichlorophenol	Toxic	Characteristic of TCLP
D042	Waste with 2,4,6-Trichlorophenol	Toxic	Characteristic of TCLP
D043	Waste with Vinyl chloride	Toxic	Characteristic of TCLP

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
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 10% or more (by volume) of one or more of the above halogenated solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	Toxic	Listed Waste
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 10% 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.	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
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 non-halogenated solvents, and, a total of 10% 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 solvents mixtures.	Ignitable	Listed Waste
F004	The following spent non-halogenated solvents: Cresols and cresylic acid, and nitrobenzene; all spent solvents mixtures/blends containing, before use, a total of 10% 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.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
F005	The following spent non-halogenated solvents: Toluene, methyl ethyl ketone, carbon disulfide, isobutanol, Pyridine, benzene, 2-ethoxyethanol, and 1-nitropropane; all spent solvent mixtures/ blends containing, before use, a total of 10% 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.	Ignitable Toxic	Listed Waste
F006	Wastewater treatment sludges from electro-plating 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.	Toxic	Listed Waste
F007	Spent cyanide plating bath solutions from electroplating operations.	Reactive, Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
F008	Plating bath residues from the bottom of plating baths from electroplating operations where cyanides are used in the process.	Reactive, Toxic	Listed Waste
F009	Spent stripping and cleaning bath solutions from electro-plating operations where cyanides are used in the process.	Reactive, Toxic	Listed Waste
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process.	Reactive, Toxic	Listed Waste
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations.	Reactive, Toxic	Listed Waste
F012	Quenching wastewater treatment sludges from metal heat treating where cyanides are used in the process.	Toxic	Listed Waste
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.	Toxic	Listed Waste
F020	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate or component in a formulating process) of tri- or tetrachlorophenol, or of intermediates used to produce their pesticide derivatives; (This listing does not include wastes from the production of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)	Acute Hazardous Waste	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
F021	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of pentachlorophenol, or of intermediates used to produce its derivatives.	Acute Hazardous Waste	Listed Waste
F022	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetrapenta, or hexachloro-benzenes under alkaline conditions.	Acute Hazardous Waste	Listed Waste
F023	Wastes (except wastewater and spent carbon from hydrogen chloride purification from the production of materials on equipment previously used for the production or manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) or tri- and tetrachlorophenols; (This listing does not include wastes from equipment used only for the production or use of Hexachlorophene from highly purified 2,4,5-trichlorophenol.)	Acute Hazardouse Waste	Listed Waste
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 catalized 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 S261.31 or S261.32).	Toxic	Listed Wasted

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
F025	Condensed light ends, spent filters and filter aids, and spent dessicant 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.	Toxic	Listed Waste
F026	Wastes (except wastewater and spent carbon from hydrogen chloride purification) from the production of materials on equipment previously used for the manufacturing use (as a reactant, chemical intermediate, or component in a formulating process) of tetra-, penta-, or hexa-chlorobenzene under alkaline conditions.	Acute Hazardous Waste	Listed Waste
F027	Discarded unused formulations containing tri-, tetra-, or pentachlorophenol or discarded unused formulations containing compounds derived from these chloropenols; (This listing does not include formulations containing Hexachlorophene synthesized from prepurified 2,4,5-tricholorophenol as the sole component.)	Acute Hazardous Waste	Listed Waste
F028	Residues resulting from the incineration or thermal treatment of soil contaminated with EPA Hazardous Waste Nos. F020, F021, F022, F023, F026, and F027.	Toxic	Listed Waste
F032	Wastewaters, 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 and where the generator does not resume or initiate use	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
	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, process residuals, preservative drippage, and spent formulations from wood preserving processes generated at plants that use creosote formulations. This listing noes not include K001 bottom sediment sludge from the treatment of wastewater from wood preserving processes that use creosote and/or pentachlorophenol.	Toxic	Listed Waste
F035	Wastewaters, 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.	Toxic	Listed Waste
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. Sludges generated in stormwater units that do not receive dry weather flow, 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.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
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 in aggressive biological treatments units as defined in 261.13(b)(2) (including sludges 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.	Toxic	Listed Waste
F039	Leachate resulting from the treatment, storage, or disposal of wastes classified by more than one waste code under Subpart D, or from a mixture of wastes classified under Subparts C and D of this part. Leachate resulting from the management of one or more of the following EPA Hazardous Wastes and no other hazardous wastes retains its hazardous waste code(s): F020, F021, F022, F023, F026, F027 and/or F028).	Toxic	Listed Waste
K001	Bottom sediment sludge from the treatment of wastewaters from wood preserving processes that use creosote and/or pentachlorophenol.	Toxic	Listed Waste
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments.	Toxic	Listed Waste
K003	Wastewater treatment sludge from the production of molybdate orange pigments.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K004	Wastewater treatment sludge from the production of zinc yellow pigments.	Toxic	Listed Waste
K005	Wastewater treatment sludge from the production of chrome green pigments.	Toxic	Listed Waste
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated).	Toxic	Listed Waste
K007	Wastewater treatment sludge from the production of iron blue pigments.	Toxic	Listed Waste
K008	Oven residue from the production of chrome oxide green pigments.	Toxic	Listed Waste
K009	Distillation bottoms from the production of acetaldehyde from ethylene.	Toxic	Listed Waste
K010	Distillation side cuts from the production of acetaldehyde from ethylene.	Toxic	Listed Waste
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile.	Reactive Toxic	Listed Waste
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile.	Reactive, Toxic	Listed Waste
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile.	Toxic	Listed Waste
K015	Still bottoms from the distallation of benzyl chloride.	Toxic	Listed Waste
K016	Heavy ends or distillation residues from the production of carbon tetrachloride.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K017	Heavy ends (still bottoms) from the purification column in the production of epichlorohydrin.	Toxic	Listed Waste
K018	Heavy ends from the fractionation column in ethyl chloride production.	Toxic	Listed Waste
K019	Heavy ends from the distillation of ethylene dichloride in ethylene dichloride production.	Toxic	Listed Waste
K020	Heavy ends from the distillation of vinyl chloride in vinyl chloride monomer production.	Toxic	Listed Waste
K021	Aqueous spent antimony catalyst waste from fluoromethanes production.	Toxic	Listed Waste
K022	Distillation bottom tars from the production of phenol/acetone from cumene.	Toxic	Listed Waste
K023	Distillation light ends from the production of phthalic anyhydride from naphthalene.	Toxic	Listed Waste
K024	Distillation bottoms from the production of Phthalic anhydride from naphthalene.	Toxic	Listed Waste
K025	Distillation bottoms from the production of nitrobenzene by the nitration of benzene.	Toxic	Listed Waste
K026	Stripping still tails from the production of methyl ethyl pyridines.	Toxic	Listed Waste
K027	Centrifuge and distillation residual from toluene diisocyanate production.	Reactive, Toxic	Listed Waste
K028	Spent catalyst from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane.	Toxic	Listed Waste
K030	Column bottoms or heavy ends from the combined production of trichloro-ethylene and perchloro-ethylene.	Toxic	Listed Waste
K031	By-product salts generated in the production of MSMA and cacodylic acid.	Toxic	Listed Waste
K032	Wastewater treatment sludge from the production of chlordane.	Toxic	Listed Waste
K033	Wastewater and scrub water from the chlorination cyclopentadiene in the production of chlordane.	Toxic	Listed Waste
K034	Filter solids from the filtration of hexachloro-cyclopentadiene in the production of chlordane.	Toxic	Listed Waste
K035	Wastwater treatment sludges generated in the production of creosote.	Toxic	Listed Waste
K036	Still bottoms from toluene reclamation distillation in the production of disulfoton.	Toxic	Listed Waste
K037	Wastwater treatment sludges from the production of disulfoton.	Toxic	Listed Waste
K038	Wastewater from the washing washing and stripping of phorate production.	Toxic	Listed Waste
K039	Filter cake from the filtration of diethyl-phosphorodithioic acid in the production of phorate.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K040	Wastewater treatment sludge from the production of phorate.	Toxic	Listed Waste
K041	Wastewater treatment sludge from the production of toxaphene.	Toxic	Listed Waste
K042	Heavy ends or distillation residues from the distillation of tetrachlorobenzene in the production of 2,4,5-T.	Toxic	Listed Waste
K043	2,6-Dichlorophenol waste from the production of 2,4-D.	Toxic	Listed Waste
K044	Wastewater treatment sludges from the manufacturing and processing of explosives.	Reactive	Listed Waste
K045	Spent carbon from the treatment of wastewater containing explosives.	Reactive	Listed Waste
K046	Wastewater treatment sludges from the manufacturing, formulation and loading of lead-based initiating compounds.	Toxic	Listed Waste
K047	Pink/red water from TNT operations.	Reactive	Listed Waste
K048	Dissolved air flotation (DAF) float from the petroleum refining industry.	Toxic	Listed Waste
K049	Slop oil emulsion solids from the petroleum refining industry.	Toxic	Listed Waste
K050	Heat exchanger bundle cleaning sludge from the petroleum refining industry.	Toxic	Listed Waste
K051	API separator sludge from the petroleum refining industry.	Toxic	Listed Waste
K052	Tank bottoms (leaded) from the petroleum refining industry.	Toxic	Listed Waste
K060	Ammonia still lime sludge from coking operations.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K061	Emission control dust/ sludge from the primary production of steel in electric furnaces.	Toxic	Listed Waste
K062	Spent pickle liquor generated by steel finishing operations of facilities within the iron and steel industry (SIC Codes 331 and 332).	Corrosive, Toxic	Listed Waste
K064	Acid plant blowdown slurry/ sludge resulting from the thickening of blowdown slurry from primary copper production.	Toxic	Listed Waste
K065	Surface impoundment solids contained in and dredged from surface impoundments at primary lead smelting facilities.	Toxic	Listed Waste
K066	Sludge from treatment of process wastewater and/or acid plant blowdown from primary zinc production.	Toxic	Listed Waste
K069	Emission control dust/ sludge from secondary lead smelting.	Toxic	Listed Waste
K071	Brine purification muds from the mercury cell process in chlorine production, where-separately prepurified brine is not used.	Toxic	Listed Waste
K073	Chlorinated hydrocarbon waste from the purification step of the diaphragm cell process using graphite anodes in chlorine production.	Toxic	Listed Waste
K083	Distillation bottoms from aniline production.	Toxic	Listed Waste
K084	Wastewater treatment sludges generated during the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K085	Distillation or fractionation column bottoms from the production of chlorobenzenes.	Toxic	Listed Waste
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.	Toxic	Listed Waste
K087	Decanter tank tar sludge from coking operations.	Toxic	Listed Waste
K088	Spent potliners from primary aluminum reduction.	Toxic	Listed Waste
K090	Emission control dust or or sludge from ferrochromium-silicon production.	Toxic	Listed Waste
K091	Emission control dust or sludge from ferrochromium production.	Toxic	Listed Waste
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene.	Toxic	Listed Waste
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene.	Toxic	Listed Waste
K095	Distillation bottoms from the production of 1,1,1-trichloroethane.	Toxic	Listed Waste
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane.	Toxic	Listed Waste
K097	Vacuum stripper discharge from the chlordane chlorinator in production of chlordane.	Toxic	Listed Waste
K098	Unatreated process wastewater from the production of toxaphene.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K099	Untreated wastewater from the production of 2,4-D	Toxic	Listed Waste
K100	Waste leaching solution from acid leaching of emission control dust/sludge from secondary lead smelting.	Toxic	Listed Waste
K101	Distillation tar residues from distillation of aniline-based compounds in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Toxic	Listed Waste
K102	Residue from the use of activated carbon for decolorization in the production of veterinary pharmaceuticals from arsenic or organo-arsenic compounds.	Toxic	Listed Waste
K103	Process residues from aniline extraction from the production of aniline.	Toxic	Listed Waste
K104	Combined wastewater streams generated from nitrobenzene/ aniline production.	Toxic	Listed Waste
K105	Separated aqueous stream from the reactor product washing step in the production of chlorobenzenes.	Toxic	Listed Waste
K106	Wastewater treatment sludge from the mercury cell process in chlorine production.	Toxic	Listed Waste
K107	Column bottoms from product separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	Corrosive Toxic	Listed Waste
K108	Condensed column overheads from product separation and condensed reactor vent gases from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazines.	Ignitable Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K109	Spent filter cartridges from product purification from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	Toxic	Listed Waste
K110	Condensed column overheads from intermediate separation from the production of 1,1-dimethylhydrazine (UDMH) from carboxylic acid hydrazides.	Toxic	Listed Waste
K111	Product washwater from the production of dinitrotoluene via nitration of toluene.	Corrosive, Toxic	Listed Waste
K112	Reaction by-product water from the drying column in the production of toluenediamine via the hydrogeneration of dinitrotoluene.	Toxic	Listed Waste
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toluenediamine via hydrogeneration of dinitrotoluene.	Toxic	Listed Waste
K114	Vicinals from the purification cation of toluenediamine in the production of toluenediamine via hydrogeneration of dinitrotoluene.	Toxic	Listed Waste
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogeneration of dinitrotoluene.	Toxic	Listed Waste
K116	Organic condensate from the solvent recovery column in the production of toluene di-isocyanate via phosgenation of toluenediamine.	Toxic	Listed Waste
K117	Wastewater from the reactor vent gas scrubber in the production of ethylene dibromide via bromination of ethene.	Toxic	Listed Waste
K118	Spent adsorbent solids from purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K123	Process wastewater (including supernates, filtrates, and washwaters) from the production of ethylenebisdithiocarbamic acid and its salts.	Toxic	Listed Waste
K124	Reactor vent scrubber water from the Production of ethylenebisdithiocarbamic acid and its salts.	Corrosive, Toxic	Listed Waste
K125	Filtration, evaporation, and centrifugation solids from the production of ethylenebisdithio-carbamic acid and its salts.	Toxic	Listed Waste
K126	Baghouse dust and floor sweepings in milling and packaging operations from the production or formulation of ethylenebisdithio-carbamic acid and its salts.	Toxic	Listed Waste
K131	Wastewater from the reactor and spent sulfuric acid from the acid dryer from the production of methyl bromide	Corrosive, Toxic	Listed Waste
K132	Spent absorbent and wastewater separator solids from the production of methyl bromide.	Toxic	Listed Waste
K136	Still bottoms from the purification of ethylene dibromide in the production of ethylene dibromide via bromination of ethene.	Toxic	Listed Waste
K140	Floor sweepings, off spec-ification product and spent filter media from the production of 2,4,6-Tribromophenol	Toxic	Listed Waste
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).	Toxic	Listed Waste
K142	Tar storage tank residues from the production of coke from coal or from the recovery of coke by-products produced from coal.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
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.	Toxic	Listed Waste
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.	Toxic	Listed Waste
K145	Residues from naphthalene collection and recovery operations from the recovery of coke by-products produced from coal.	Toxic	Listed Waste
K147	Tar storage tank residues from coal tar refining.	Toxic	Listed Waste
K148	Residues from coal tar distillation, including but not limited to, still bottoms.	Toxic	Listed Waste
K149	Distillation bottoms from the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Toxic	Listed Waste
K150	Organic residuals, excluding spent carbon adsorbent, from the spent chlorine gas and hydrochloric acid recovery processes associatd with the production of alpha- (or methyl-) chlorinated toluenes, ring-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Toxic	Listed Waste
K151	Wastewater treatment sludges, excluding neutralization and biological sludges, generated during the treatment of wastewaters from the production of alpha- (or methyl-) chlorinated toluenes, ting-chlorinated toluenes, benzoyl chlorides, and compounds with mixtures of these functional groups.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K156	Organic waste (including heavy ends, still bottoms, light ends, spent solvents, filtrates and decantates) from the production of carbamates and carbamoyl oximes.	Toxic	Listed Waste
K157	Wastewaters (including scrubber waters, consenser waters, washwaters, and separation waters) from the production of carbamates and carbamoyl oximes.	Toxic	Listed Waste
K158	Bag house dusts and filter/ separation solids from the production of carbamates and carbamoyl oximes.	Toxic	Listed Waste
K159	Organics from the treatment of thiocarbamate wastes.	Toxic	Listed Waste
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.)	Reactive, Toxic	Listed Waste
K169	Crude oil storage tank sediment from petroleum refining operations.	Toxic	Listed Waste
K170	Clarified slurry oil tank sediment and/or in-line filter separation solids from petroleum refining operations.	Toxic	Listed Waste
K171	Spent Hydrotreating catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	Ignitable, Toxic	Listed Waste
K172	Spent Hydrorefining catalyst from petroleum refining operations, including guard beds used to desulfurize feeds to other catalytic reactors (this listing does not include inert support media).	Ignitable, Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
K174	Wastewater treatment sludges from the production of ethylene dichloride or vinyl chloride monomer (including sludges that result from commingled ethylene dichloride or vinyl chloride monomer wastewater and other wastewater), unless the sludges meet the following conditions: (i) they are disposed of in a subtitle C or non-hazardous landfill licensed or permitted by the state or federal government; (ii) they are not otherwise placed on the land prior to final disposal; and (iii) the generator maintains documentation demonstrating that the waste was either disposed of in an on-site landfill or consigned to a transporter or disposal facility that provided a written commitment to dispose of the waste in an off-site landfill. Respondents in any action brought to enforce the requirements of subtitle C must, upon a showing by the government that the respondent managed wastewater treatment sludges from the production of vinyl chloride monomer or ethylene dichloride, demonstrate that they meet the terms of the exclusion set forth above. In doing so, they must provide appropriate documentation (e.g., contracts between the generator and the landfill owner/operator, invoices documenting delivery of waste to landfill, etc.) that the terms of the exclusion were met.	Toxic	Listed Waste
K175	Wastewater treatment sludges from the production of vinyl chloride monomer using mercuric chloride catalyst in an acetylene-based process.	Toxic	Listed Waste
K176	Baghouse filters from the production of antimony oxide, including filters from the production of intermediates (e.g., antimony metal or crude antimony oxide).	Toxicity Characteristic	Listed Waste
K177	Slag from the production of antimony oxide that is speculatively accumulated or disposed, including slag from the production of intermediates (e.g., antimony metal or crude antimony oxide).	Toxic	Listed Waste
K178R	Residues from manufacturing and manufacturing-site storage of ferric chloride from acids formed during the production of titanium dioxide using the chloride-ilmenite process.	Toxic	Listed Waste

The basis for listing (F) and (K) code wastes is identified in 40 CFR Part 261, Appendix VII.

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P001	2H-1-Benzopyran-2-one, 4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations greater than 0.3%. Warfarin, & salts, when present at concentrations greater than 0.3%	Acute Toxicity	Listed Waste
P002	Acetamide, N-(aminothioxomethyl) 1-Acetyl-2-thiourea	Acute Toxicity	Listed Waste
P003	Acrolein 2-Propenal	Acute Toxicity	Listed Waste
P004	Aldrin 1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexa-chloro-1,4,4a,5,8,8a,-hexahydro-(1alpha,4alpha,4abeta, 5alpha,8alpha,8abeta)-	Acute Toxicity	Listed Waste
P005	Allyl Alcohol 2-Propen-1-ol	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P006	Aluminum Phosphide (R,T)	Toxic, Reactive	Listed Waste
P007	5-(Aminomethyl)-3-isoxazolol 3(2H)-Isoxazolone, 5-(aminomethyl)-	Acute Toxicity	Listed Waste
P008	4-Aminopyridine 4-Pyridinamine	Acute Toxicity	Listed Waste
P009	Ammonium Picrate Pheol, 2-(1-methylpropyl-4, 6-dinitro-	Reactive	Listed Waste
P010	Arsenic acid H3AsO4	Acute Toxicity	Listed Waste
P011	Arsenic oxide AS205, Arsenic pentoxide	Acute Toxicity	Listed Waste
P012	Arsenic trioxidel Arsenic As2o3	Acute Toxicity	Listed Waste
P013	Barium cyanide	Acute Toxicity	Listed Waste
P014	Benzenethiol Thiophenol	Acute Toxicity	Listed Waste
P015	Beryllium dust	Acute Toxicity	Listed Waste
P016	Dichloromethyl ether Methane, oxybis(chloro-	Acute Toxicity	Listed Waste
P017	Bromoacetone 2-Propanone, 1-bromo-	Acute Toxicity	Listed Waste
P018	Brucine Strychnidin-10-one, 2,3-dimethoxy-	Acute Toxicity	Listed Waste
P020	Phenol, 2-(methylpropyl) - 4, 6-Dinitro Dinoseb	Acute Toxicity	Listed Waste
P021	Calcium cyanide Calcium cyanide Ca(CN)2	Acute Toxicity	Listed Waste
P022	Carbon Disulfide	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P023	Chloroacetaldehyde Acetaldehyde, chloro-	Acute Hazardous	Listed Waste
P024	P-Chloroaniline Benzenamine, 4-chloro-	Acute Toxicity	Listed Waste
P026	1-(o-Chlorophenyl) thiourea Thiourea, (2-chlorophenyl)-	Acute Toxicity	Listed Waste
P027	3-Chloropropionitrile Propanenitrile, 3-chloro-	Acute Toxicity	Listed Waste
P028	Benzene, (chloromethyl) Benzyl chloride	Acute Toxicity	Listed Waste
P029	Copper Cyanide Copper Cyanide CU(CN)	Acute Toxicity	Listed Waste
P030	Cyanides (soluble cyanide salts) not otherwise specified	Acute Toxicity	Listed Waste
P031	Ethanedinitrile Cyanogen	Acute Toxicity	Listed Waste
P033	Cyanogen Chloride Cyanogen chloride (CN)Cl	Acute Toxicity	Listed Waste
P034	2-Cyclohexyl-4,6-dinitrophenol Phenol, 2-cyclohexyl-4,6-dinitro-	Acute Toxicity	Listed Waste
P036	Dichlorophenylarsine Arsonous dichloride, phenyl-	Acute Toxicity	Listed Waste
P037	Dieldrin 2,7:3,6-Dimethanonaphth [2,3-b] oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-(1aalpha, 2beta, 2aalpha,3beta,6beta,6aalpha, 7beta,7aalpha)-	Acute Toxicity	Listed Waste
P038	Arsine, diethyl drethylorsine	Acute Toxicity	Listed Waste
P039	Disulfoton Phosphorodithioic acid O,O-diethyl S-[2-(ethylthio)ethyl] ester	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P040	0, O-Diethyl 0-pyrazinyl phosphorothioate Phosphorothioic acid, O,O-diethyl 0-pyrazinyl ester	Acute Toxicity	Listed Waste
P041	Diethyl-p-nitrophenyl phosphate Phosphoric acid, diethyl 4-nitrophenyl ester	Acute Toxicity	Listed Waste
P042	1,2-Benzenediol, 4-[1-hydroxy-2-(methylamino)ethyl]-, Epinephrine	Acute Toxicity	Listed Waste
P043	Diisopropylfluorophosphate (DFP) vhosphorofluoridic acid, bis(1-methylethyl) ester	Acute Toxicity	Listed Waste
P044	Dimethoate Phosphorodithioic acid, O,O-dimethyl S-[2-(methyl-amino)-2-oxoethyl) ester	Acute Toxicity	Listed Waste
P045	2-Butanone, 3,3-dimethyl-1-(methyithio)-,O-[methylamino)carbonyl] oxime Thiofanox	Acute Toxicity	Listed Waste
P046	alpha,alpha-Dimethyl-phenethylamine Benzeneethanamine, alpha, alpha-dimethyl-	Acute Toxicity	Listed Waste
P047	4,6-Dinitro-O-cresol and salts Phenol, 2-methyl-4, 6-dinitro-, & salts	Acute Toxicity	Listed Waste
P048	2,4-Dinitrophenol Phenol, 2,4-dinitro-	Acute Toxicity	Listed Waste
P049	Dithiobiuret Thioimidodicarbonic diamide C(H2N)C(S)12NH	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P050	Endosulfan 6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide	Acute Toxicity	Listed Waste
P051	Endrin Metabolites 2,7:3,6-Dimethanonaphth [2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aalpha, 2beta,2abeta,3alpha,6alpha, 6abeta,7beta,7aalpha)-, & metabolites	Acute Toxicity	Listed Waste
P054	Ethyleneimine Aziridine	Acute Toxicity	Listed Waste
P056	Fluorine	Acute Toxicity	Listed Waste
P057	Fluoroacetamide Acetamide, 2-flouro-	Acute Toxicity	Listed Waste
P058	Fluorocetic acid, sodium salt Acetic acid, fluoro-, sodium salt	Acute Toxicity	Listed Waste
P059	Heptachlor 4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	Acute Toxicity	Listed Waste
P060	Isodrin 1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-(1alpha,4alpha,4abeta, 5beta,8beta,8abeta)-	Acute Toxicity	Listed Waste
P062	Hexaethyl tetrophosphate Tetraphosphoric acid, hexaethyl ester	Acute Toxicity	Listed Waste
P063	Hydrocyanic acid Hydrogen cyanide	Acute Toxicity	Listed Waste
P064	Methane, isocyanato- Methyl isocyanate	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P065	Mercury fulminate Fulminic acid, mercury (2+) salt	Reactive Acute Toxicity	Listed Waste
P066	Methomyl Ethanimidothioic acid N-([(methylamino) carbonyl]oxy]-, methyl ester	Acute Toxicity	Listed Waste
P067	Aziridine, 2-methyl- 1,2-Propylenimine	Acute Toxicity	Listed Waste
P068	Hydrazine, methyl- Methyl hydrazine	Acute Toxicity	Listed Waste
P069	2-Methyllactonitrile Propanenitrile, 2-hydroxy-2-methyl-	Acute Toxicity	Listed Waste
P070	Propanal, 2-methyl-2-(methlthio)-o-((methylamino)carbonyl] oxime Aldicarb	Acute Toxicity	Listed Waste
P071	Methyl parathion Phosphorothioic acid, 0, O,-dimethyl O-(4-nitrophenyl) ester	Acute Toxicity	Listed Waste
P072	Alpha-napnthylthiourea Thiourea, 1-naphthalenyl-	Acute Toxicity	Listed Waste
P073	Nickel carbonyl Nickel carbonyl Ni(CO)4, (T-4)-	Acute Toxicity	Listed Waste
P074	Nickel cyanide Nickel cyanide Ni(CN)2	Acute Toxicity	Listed Waste
P075	Nicotine and salts Pyridine, 3-(1-methyl-2-pyrrolidinyl)- (S)-, & salts	Acute Toxicity	Listed Waste
P076	Nitric oxide Nitrogen oxide NO	Acute Toxicity	Listed Waste
P077	P-Nitroaniline Benzenamine, 4-nitro-	Acute Toxicity	Listed Waste
P078	Nitrogen dioxide Nitrogen oxide N02 trinitrate	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P081	Nitroglycerine 1,2,3-Propanetrial, trinitrate	Reactive	Listed Waste
P082	N-Nitrosodimothylamine Methanamine, N-methyl-N-nitroso-	Acute Toxicity	Listed Waste
P084	N-Nitrosomethylvinylamine Vinylamine, N-methyl-N-nitroso-	Acute Toxicity	Listed Waste
P085	Octamethylpyrophosphoramide Diphosphoramide, octamethyl-	Acute Toxicity	Listed Waste
P087	Osmium tetroxide Osmium oxide OsO4, (T-4)-	Acute Toxicity	Listed Waste
P088	7-Oxabicyclo [2.2.1) heptane-2,3-dicarboxylic acid Endothall	Acute Toxicity	Listed Waste
P089	Parathion Phosphorothioic acid, O,O-diethyl O-(4-nitrophenyl) ester	Acute Toxicity	Listed Waste
P092	Phenylmercuric acetate Mercury, (acetato-0) phenyl-	Acute Toxicity	Listed Waste
P093	Phenylthiourea Thiourea,. phenyl-	Acute Toxicity	Listed Waste
P094	Phorate Phosphorodithioic acid, 0-0-diethyl S-[(ethylthio)methyl) ester	Acute Toxicity	Listed Waste
P095	Phosgene	Acute Toxicity	Listed Waste
P096	Hydrogen phosphide	Acute Toxicity	Listed Waste
P097	Phosphorothioic acid, O-(dimenthylamino) sulfonyllphenyl 0, 0, 0-dimethyl ester Famphur	Acute Toxicity	Listed Waste
P098	Potassium cyanide Potassium cyanide K(CN)	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P099	Potassium silver cyanide Argentate(1-), bis(cyano-C), potassium	Acute Toxicity	Listed Waste
P101	Propanenitrile Ethyl cyanide	Acute Toxicity	Listed Waste
P102	Properglyl alcohol 2-propyn-1-ol	Acute Toxicity	Listed Waste
P103	Selenourea	Acute Toxicity	Listed Waste
P104	Silver cyanide Silver cyanide Ag(CN)	Acute Toxicity	Listed Waste
P105	Sodium azide	Acute Toxicity	Listed Waste
P106	Sodium cyanide Sodium cyanide Na(CN)	Acute Toxicity	Listed Waste Acute Listed Waste
P108	Strychnine and salts Strychnidin-10-one, & salts	Acute Toxicity	Listed Waste
P109	Tetraethyldithiopyrophos-phate Thiodiphosphoric acid, tetraethyl ester	Acute Toxicity	Listed Waste
P110	Tetraethyl lead Plumbane, tetraethyl-	Acute Toxicity	Listed Waste
P111	Tetraethylpyrophosphate Diphosphoric acid,, tetraethyl ester	Acute Toxicity	Listed Waste
P112	Tetranitromethane Methane, tetranitro-	Reactive	Listed Waste
P113	Thallic oxide Thallium oxide TI203	Acute Toxicity	Listed Waste
P114	Thallium (I) selenite Selenious acid, dithallium (1+) salt	Acute Toxicity	Listed Waste
P115	Thallium (I) sulfate Sulfuric acid, dithallium (1+) salt	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P116	Thiosemicarbazide Hydrazinecarbothioamide	Acute Toxicity	Listed Waste
P118	Trichloromethanethiol Methanethiol, trichloro-	Acute Toxicity	Listed Waste
P119	Vanadic acid, ammonium salt Ammonium vanadate	Acute Toxicity	Listed Waste
P120	Vanadium oxide V205 Vanadium pentioxide	Acute Toxicity	Listed Waste
P121	Zinc cyanide Zinc cyanide Zn(CN)2	Acute Toxicity	Listed Waste
P122	Zinc phosphide Zn3P2, when present at concentrations greater than 10%	Reactive Acute Toxicity	Listed Waste
P123	Toxaphene	Acute Toxicity	Listed Waste
P127	7-Benzofuranol, 2,3-dihydro-2,2-dimethyl-,methylcarbamate Carbofuran.	Acute Toxicity	Listed Waste
P128	Phenol, 4-(dimethylamino)-3,5-dimethyl, methylcarbamate (ester).	Acute Toxicity	Listed Waste
P185	1,3-Dithiolane-2-carboxaldehyde, 2,3-dimethyl-, O-[(methylamino) -carbonyl]oxime.	Acute Toxicity	Listed Waste
P188	Benzoic acid, 2-hydroxy-, compd. With(3aS-cis)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo [2,3-b]indol-5-yl methylcarbamate ester (1:1)	Acute Toxicity	Listed Waste
P189	Carbamic acid, [(dibutylamino) -thio]methyl-.2,3-dihydro-2, 2-dimethyl-7-benzofuranyl ester.	Acute Toxicity	Listed Waste
P190	Carbamic acid, methyl-,3-methyl phenyl ester.	Acute Toxicity	Listed Waste
P191	Carbamic acid, dimethyl-, 1-[(dimethyl-amino)carbonyl]-5 -methyl-1H-pyrazol-3-yl ester.	Acute Toxicity	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
P192	Carbamic acid, dimethyl-,3-methyl-1-(1-methylethyl)-1H-pyrazol-5-yl ester.	Acute Toxicity	Listed Waste
P194	Ethanimidothioc acid, N-[[(methylamino)carbonyl]oxy]-, methyl ester. Oxamyl.	Acute Toxicity	Listed Waste
P196	Manganese, bis(dimethylcarbamodithioato-S,S')-. Manganese dimethyldithiocarbamate.	Acute Toxicity	Listed Waste
P197	Formaparanate. Methanimidamide, N,N-dimethyl-N'-[2-methyl-4-[[(methyl-amino)carbonyl]oxy]phenyl]-	Acute Toxicity	Listed Waste
P198	Formetanate hydrochloride. Methanimidamide, N,N,-dimethyl-N'-[3-[[(methylamino)-carbonyl]oxy]phenyl]-,monohydrochloride.	Acute Toxicity	Listed Waste
P199	Methiocarb	Acute Toxicity	Listed Waste
P201	Phenol, 3-methyl-5-(1-methyl ethyl)-,methyl carbamate.	Acute Toxicity	Listed Waste
P202	Phenol, 3(1-methylethyl)-, methyl carbamate. 3-Isopropylphenyl N-methyl carbamate. m-Cumenyl methylcarbamate.	Acute Toxicity	Listed Waste
P203	Aldicarb sulfone.	Acute Toxicity	Listed Waste
P204	Pyrrolo[2,3-b]indol-5-ol,1,2,3,3a,8,8a-hexahydro-1,3a,-8-trimethyl-methylcarbamate (ester), (3aS-cis)-. Physostigmine.	Acute Toxicity	Listed Waste
P205	Zinc, bis(dimethylcarbamodithioato-S,S')-. Ziram.	Acute Toxicity	Listed Waste
U001	Acetaldehyde Ethanal	Ignitable	Listed Waste
U002	Acetone 2-Propanone	Ignitable	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U003	Acetonitrile	Toxic Ignitable	Listed Waste
U004	Acetophenone Ethanone, 1-phenyl-	Toxic	Listed Waste
U005	2-Acetylaminofluorene	Toxic	Listed Waste
U006	Acetyl Chloride	Toxic Reactive Corrosive	Listed Waste
U007	Acrylamide 2-Propenamide	Toxic	Listed Waste
U008	Acrylic Acid 2-Propenoic acid	Ignitable	Listed Waste
U009	Acrylonitrile 2-Propenenitrile	Toxic	Listed Waste
U010	Azirino(21,31:3,4)pyrrolo [1,2-a]indole-4,7-dione, amino-8-([(aminocarbonyl) oxy]methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-(1aS-(1aalpha,8beta,8aalpha, 8balpha)]-Mitomycin C	Toxic	Listed Waste
U011	Amitrole 1H-1,2,4-Triazol-3-amine	Toxic	Listed Waste
U012	Aniline Benzenamine	Toxic Ignitable	Listed Waste
U014	Auramine Benzenamine, 4,4-carbonimidoylbis[N,N-dimethyl-	Toxic	Listed Waste
U015	Azaserine L-Serine, diazoacetate (ester)	Toxic	Listed Waste
U016	Benz[c]acridine	Toxic	Listed Waste
U017	Benzal chloride Benzene, (dichloromethyl)-	Toxic	Listed Waste
U018	Benz[a]anthracene	Toxic	Listed Waste
U019	Benzene	Toxic Ignitable	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U020	Benzenesulfonyl chloride Benzenesulfonic acid	Corrosive Reactive	Listed Waste
U021	Benzidine (1,11-Biphenyl]-4,4'- diamine	Toxic	Listed Waste
U022	Benzo[a]pyrene	Toxic	Listed Waste
U023	Benzotrichloride Benzene, (trichloromethyl)-	Toxic Corrosive Reactive	Listed Waste
U024	Bis(2-Chloroethoxy methane Dichloromethoxy ethane Ethane, 1,11-[methylenebis (oxy) bis[2-chloro-	Toxic	Listed Waste
U025	Bis(2-chloroethyl) ether Dichloroethyl ether Ethane,, 1,11-oxybis[2-chloro-	Toxic	Listed Waste
U026	N,N-Bis(2-chloroethyl) 2-naphthylamine Chlornaphazin	Toxic	Listed Waste
U027	Bis(2-chloroisopropyl) ether Dichloroisopropyl ether Propane, 2,2'-oxybis (2-chloro-	Toxic	Listed Waste
U028	Bis (2-ethylhexyl) phthalate 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester Diethylhexyl phthalate	Toxic	Listed Waste
U029	Bromothethane Methane, bromo- Methyl bromide	Toxic	Listed Waste
U030	4-Bromophenyl phenyl ether Benzene, 1-bromo- 4-phenoxy-	Toxic	Listed Waste
U031	n-Butyl alcohol 1-Butanol	Ignitable	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U032	Calcium Chromate Chromic acid H2CrO4,calcium salt	Toxic	Listed Waste
U033	Carbonyl Fluoride Carbonic difluoride Carbon oxyfluoride	Reactive Toxic	Listed Waste
U034	Acetaldehyde, trichloro-	Toxic	Listed Waste
U035	Chlorambucil Benzenebutanoic acid,, 4-[bis(2-chloroethyl) amino]-	Toxic	Listed Waste
U036	Chlordane, alpha & gamma isomers 4,7-Methano-1H-indene,1 1,2,4,5,6,7,8,8-octachloro- 2,3,3a,4,7,7a-hexahydro-	Toxic	Listed Waste
U037	Chlorobenzene Benzene, chloro-	Toxic	Listed Waste
U038	Ethyl 4,4-Dichloro- benzilate Benzeneacetic acid, 4-chloro- alpha-(4-chlorophenyl)- alpha-hydroxy-, ethyl ester Chlorobenzilate	Toxic	Listed Waste
U039	P-Chloro-m-cresol Phenol, 4-chloro-3-methyl-	Toxic	Listed Waste
U041	1-Chloro-2,3- epoxypropane Epichlorohydrin Oxirane, (chloromethyl)-	Toxic	Listed Waste
U042	2-Chloroethyl vinyl ether Ethane, (2,chloroethoxy)-	Toxic	Listed Waste
U043	Chloroethene Ethene, chloro- Vinyl chloride	Toxic	Listed Waste
U044	Chloroform Methane, trichlorofluoro-	Toxic	Listed Waste
U045	Cloromethane	Toxic Ignitable	Listed Waste
U046	Chloromethyl methyl ether Methane, chloromethoxy-	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U047	Beta-Chloronaphthalene	Toxic	Listed Waste
U048	O-Chlorophenol	Toxic	Listed Waste
U049	4-Chloro-O-toluidine hydrochloride Benzenamine, 4-chloro-2-methyl-, hydrochloride	Toxic	Listed Waste
U050	Chrysene	Toxic	Listed Waste
U051	Creosote	Toxic	Listed Waste
U052	Cresols (Cresylic Acid) Phenol, methyl-	Toxic	Listed Waste
U053	Crotonaldehyde 2-Butenal	Toxic	Listed Waste
U055	Cumene Benzene, (1-methylethyl)-	Ignitable	Listed Waste
U056	Cyclohexane Benzene, hexahydro-	Ignitable	Listed Waste
U057	Cyclohexanone	Ignitable	Listed Waste
U058	Cyclophosphamide 2H-1,3,2-Oxazaphosphorin-2-arnine, N,N-bis(2-chloroethyl) tetrahydro-,2-oxide	Toxic	Listed Waste
U059	Daunomycin 5,12-Naphthacenedione, 8-acetyl-10 [(3-amino-2,3,6-trideoxy)-alpha-L-lyxo-hexopyranosyl)oxy] 7,8,9,10-tetrahydro-6,8,11-trihydroxy -1-methoxy-(8s-cis)-	Toxic	Listed Waste
U060	DDD Benzene, 1,11-(2,2-dichloroe.thylidene)bis[4-chloro-	Toxic	Listed Waste
U061	DDT Benzene, 1,11-(2,2,2-trichloroethylidene)bis[4-chloro-	Toxic	Listed Waste
U062	Diallate Carbamothioic acid,bis(1-methyl ethyl)-,S-(2,3-dichloro-2-propenyl) ester	Toxic	Listed Waste
U063	Dibenz(a,h)anthracene	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U064	Dibenzo(a,i)pyrene Benzo[rst)pentaphene	Toxic	Listed Waste
U066	1,2-Diabromo-3-chloropropane Propane, 1,2-dibromo-3-chloro-	Toxic	Listed Waste
U067	1,2-Dibromoethane Ethane, 1,2-dibromo-	Toxic	Listed Waste
U068	Dibromomethane	Toxic	Listed Waste
U069	Dibutyl phthalate 1,2-Benzenedicarboxylic acid, dibutyl ester	Toxic	Listed Waste
U070	O-Dichlorobenzene Benzene, 1,2-dichloro-	Toxic	Listed Waste
U071	m-Dichlorobenzene Benzene, 1,3-dichloro-	Toxic	Listed Waste
U072	p-Dichlorobenzene Benzene, 1,4-dichloro-	Toxic	Listed Waste
U073	3,31-Dichlorobenzidine (1,11-Biphenyl)-4,4'-diamine, 3,31-dichloro-	Toxic	Listed Waste
U074	1,4-Dichloro-2-butene 2-Butene, 1,4-dichloro-	Toxic, Ignitable	Listed Waste
U075	Dichlorodifluoromethane	Toxic	Listed Waste
U076	1,1-Dichloroethane Ethane, 1,1-dichloro- Ethylidene dichloride	Toxic	Listed Waste
U077	1,2-Dichloroethane Ethane, 1,2-dichloro-	Toxic	Listed Waste
U078	1,1-Dichloroethylene Ethene, 1,1-dichloro-	Toxic	Listed Waste
U079	1,2-Dichloroethylene Ethene, 1,2-dichloro-,(E)	Toxic	Listed Waste
U080	Dichlormethane Methylene chloride	Toxic	Listed Waste
U081	2,4-Dichlorophenol	Toxic	Listed Waste
U082	2,6-Dichlorophenol	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U083	1,2-Dichloropropane Propylene dichloride	Toxic	Listed Waste
U084	1,3-Dichloropropene	Toxic	Listed Waste
U085	1,2:3,4-Diepoxybutane 2,21-Bioxirane	Toxic, Ignitable	Listed Waste
U086	N,N'-Diethylhydrazine Hydrazine, 1,2-diethyl-	Toxic	Listed Waste
U087	O,O-Diethyl-8-methyl dithiophosphate	Toxic	Listed Waste
U088	Diethyl phthalate 1,2-Benzendicarboxylic acid, diethyl ester	Toxic	Listed Waste
U089	Diethylstilbestrol Phenol, 4,41-(1,2-diethyl- 1,2-ethenediyl)bis-, (E)-	Toxic	Listed Waste
U090	Dihydrosafrole 1,3-Benzodioxole, 5-propyl-	Toxic	Listed Waste
U091	3,31-Dimethoxybenzidine [1,1'-Biphenyl]-4,4'-diamine 3,3'-dimethoxy-	Toxic	Listed Waste
U092	Dimethylamine Methanamine, N-methyl-	Ignitable	Listed Waste
U093	p-Dimethylaminoazobenzene Benzenamine, N,N-dimethyl-4- (phenylazo)-	Toxic	Listed Waste
U094	7,12-Dimethylbenz(a) - anthracene	Toxic	Listed Waste
U095	3,31-Dimethylbenzidine [1,1'-bIPHENYL]-4,4'- diamine, 3,31-dimethyl-	Toxic	Listed Waste
U096	Alpha, alpha-Dimethyl benzylhydroperoxide Hydroperoxide, 1-methyl- 1-phenylethyl-	Reactive	Listed Waste
U097	Dimethylcarbamoyl chloride Carbamic chloride, dimethyl-	Toxic	Listed Waste
U098	1,1-Dimethylhydrazine	Toxic	Listed Waste
U099	1,2-Dimethylhydrazine	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U101	2,4-Dimethylhydrazine 2,4-Dimethylphenol	Toxic	Listed Waste
U102	Dimethyl phthalate 1,2-Benzenedicarboxylic acid, dimethyl ester	Toxic	Listed Waste
U103	2,4-Dinitrotoluene Dimethyl sulfate	Toxic	Listed Waste
U105	2,4-Dinitrotoluene Benzene, 1-methyl-2,4-dinitro-	Toxic	Listed Waste
U106	2,6-Dinitrotoluene Benzene, 2-methyl-1,3-dinitro-	Toxic	Listed Waste
U107	Di-n-octyl phthalate 1,2-Benzenedicarboxylic acid, dioctryl ester	Toxic	Listed Waste
U108	1,4-Dioxane 1,4-Diethyleneoxide	Toxic	Listed Waste
U109	1,2-Diphenylhydrazine	Toxic	Listed Waste
U110	Dipropylamine	Ignitable	Listed Waste
U111	Di-n-propylnitrosamine	Toxic	Listed Waste
U112	Ethyl Acetate Acetic acid ethyl ester	Ignitable	Listed Waste
U113	Ethyl acrylate 2-Propenoic acid, ethyl ester	Ignitable	Listed Waste
U114	Ethylenebisdithiocarbamic Acid, Salts & Esters Carbamodithioic acid, 1,2-ethanediylbis-, salts & esters	Toxic	Listed Waste
U115	Ethylene oxide Oxirane	Toxic, Ignitable	Listed Waste
U116	Ethylene thiourea 2-Imidazolidinethione	Toxic	Listed Waste
U117	Ethyl ether Ethane, 1,11-oxybis-	Ignitable	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U118	Ethymethacrylate 2-Propenoic acid, 2-methyl-ethyl ester	Toxic	Listed Waste
U119	Methanesulfonic acid, ethyl ester	Toxic	Listed Waste
U120	Fluoranthene	Toxic	Listed Waste
U121	Fluorotrichloromethane Trichloromonofluoromethane	Toxic	Listed Waste
U122	Formaldehyde	Toxic	Listed Waste
U123	Formic acid	Toxic, Corrosive	Listed Waste
U124	Furfuran	Ignitable	Listed Waste
U125	Furfural 2-Furancarboxaldehyde Furfural	Ignitable	Listed Waste
U126	Glycidylaldehyde Oxiranecarboxyaldehyde	Toxic	Listed Waste
U127	Hexachlorobenzene	Toxic	Listed Waste
U128	Hexachlorobutadiene 1,3-Butadiene, 1,1,2,3, 4,4-hexachloro-	Toxic	Listed Waste
U129	Hexachlorocyclohexane Cyclohexane, 1,2,3,4,5,6-hexachloro-, (1alpha,2alpha, 3beta,4alpha,6beta)- Lindane	Toxic	Listed Waste
U130	Hexachlorocyclopentadiene 1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro-	Toxic	Listed Waste
U131	Hexachloroethane	Toxic	Listed Waste
U132	Hexachlorophene Phenol, 2,2'-methylenebis[3,4,6-trichlor-	Toxic	Listed Waste
U133	Hydrazine	Toxic, Reactive	Listed Waste
U134	Hydrofluoric acid Hydrogen fluoride	Toxic, Corrosive	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U135	Hydrogen sulfide H2S	Toxic	Listed Waste
U136	Arsinic acid, dimethyl- oxide Cacodylic acid	Toxic	Listed Waste
U137	Indeno(1,2,3-cd)pyrene	Toxic	Listed Waste
U138	Iodomethane	Toxic	Listed Waste
U140	Isobutyl alcohol 1-Propanol, 2-methyl-	Toxic, Ignitable	Listed Waste
U141	Isosafrole 1,3-Benzodioxole, 5-(I-propenyl)-	Toxic	Listed Waste
U142	Kepone 1,3,4-Metheno-2H- cyclobuta[cd]pentalen-2-one. 1,1a,3,3a,4,5,5,5a,5b,6- decachlorooctahydro-	Toxic	Listed Waste
U143	Lasiocarpine 2-Butenoic acid, 2-methyl-, 7-([2,3-dihydroxy-2-(1-methoxy ethyl)-3-methyl-1-oxobutoxy[methyl] -2,3,5,7a-tetrahydro-1H-pyrrolizin- 1-yl ester, [1S-(1alpha(Z),7(2S*,3R*), 7aalpha]]-	Toxic	Listed Waste
U144	Lead acetate Acetic acid, lead (2+) salt	Toxic	Listed Waste
U145	Lead phosphate Phosphoric acid, lead(2+) salt (2:3)	Toxic	Listed Waste
U146	Lead subacetate Lead, bis(acetato-0) tetrahydroxytri-	Toxic	Listed Waste
U147	Maleic anhydride 2,5-Furandione	Toxic	Listed Waste
U148	Maleic hydrazide 3,6-Pyridazinedione, 1,2-dihydro-	Toxic	Listed Waste
U149	Malononitrile Propanedinitrile	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U150	Malphalan L-Phenylalanine, 4-[bis (2-chloroethyl) amino)-	Toxic	Listed Waste
U151	Mercury	Toxic	Listed Waste
U152	Methacrylonitrile	Toxic, Ignitable	Listed Waste
U153	Methanethiol Thiomethanol	Toxic, Ignitable	Listed Waste
U154	Methanol Methyl alcohol	Toxic, Ignitable	Listed Waste
U155	Methapyrilene 1,2-Ethanediamine, N-N-dimethyl-N'2-pyridinyl-Nl-(2-thienyimethyl)-	Toxic	Listed Waste
U156	Methyl chlorocarbonate Carbonochloridic acid, methyl ester	Toxic, Ignitable	Listed Waste
U157	Benz[j]aceanthrylene, 1,2-dihydro-3-methly-	Toxic	Listed Waste
U158	Benzenamine, 4,4'-methylenebis[2-chloro-	Toxic	Listed Waste
U159	Methyl ethyl ketone (MEK) 2-Butanone	Toxic, Ignitable	Listed Waste
U160	Methyl ethyl ketone peroxide 2-Butanone, peroxide	Toxic Reactive	Listed Waste
U161	Methyl isobutyl ketone 4-Methyl-2-pentanone	Ignitable	Listed Waste
U162	Methyl methacrylate 2-Propenoic acid, 2-methyl-, methyl ester	Toxic, Ignitable,	Listed Waste
U163	N-methyl-N-nitro-N-Nitrosoguanidine Guanidine, N-methyl-N'-nitro-N-nitroso- MNNG	Toxic	Listed Waste
U164	Methylthiouracil 4(lH)-Pyrimidinone, 2,3-dihydro-6-methyl-2-thioxo-	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U165	Naphthalene	Toxic	Listed Waste
U166	1,4-Naphthoquinone 1,4-Naphthalenedione	Toxic	Listed Waste
U167	I-Naphthylamine	Toxic	Listed Waste
U168	2-Naphthylamine	Toxic	Listed Waste
U169	Nitrobenzene	Toxic Ignitable	Listed Waste
U170	P-Nitrobenzene P-Nitrophenol	Toxic	Listed Waste
U171	2-Nitropropane	Toxic, Ignitable	Listed Waste
U172	N-Nitrosodi-n-butylamine 1-Butanamine, N-butyl-N-nitroso-	Toxic	Listed Waste
U173	N-Nitrosodiethanolamine Ethanol, 2,21-(nitrosoimino) bis-	Toxic	Listed Waste
U174	N-Nitrosodiethylamine Ethanamine, N-ethyl-N-nitroso-	Toxic	Listed Waste
U176	N-Nitroso;-n-ethylurea Urea, N-ethyl-N-nitroso-	Toxic	Listed Waste
U177	N-Nitroso-n-methylurea Urea, N-methyl-N-nitroso-	Toxic	Listed Waste
U178	N-Nitroso-n-methylurethane Carbamic acid, methylnitroso-, ethyl ester	Toxic	Listed Waste
U179	N-Nitrosopiperidine	Toxic	Listed Waste
U180	N-Nitrosopyrrolidine Pyrrolidine, 1-nitroso-	Toxic	Listed Waste
U181	5-Nitro-0-toluidine Benzenamine, 2-methyl-5-nitro-	Toxic	Listed Waste
U182	Paraldehyde 1,3,5-Trioxane, 2,4,6-trimethyl-	Toxic	Listed Waste
U183	Pentachlorobenzene	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U184	Pentachloroethane	Toxic	Listed Waste
U185	Pentachloronitrobenzene (PCNB)	Toxic	Listed Waste
U186	1,3-Pentadiene	TIgnitable	Listed Waste
U187	Acetamide, N-(4-ethoxyphenyl) Phenacetin	Toxic	Listed Waste
U188	Phenol	Toxic	Listed Waste
U189	Phosphorous sulfide	Reactive	Listed Waste
U190	Phthalic anhydride 1,3-Isobenzofurandione	Toxic	Listed Waste
U191	2-picoline Pyridine, 2-methyl-	Toxic	Listed Waste
U192	Pronamide Benzamide, 3,5-dichloro-N-(I,1-dimethyl-2-propynyl)-	Toxic	Listed Waste
U193	1,3-Propane sultone 1,2-Oxathiolane, 2,2-dioxide	Toxic	Listed Waste
U194	1-Propylamine 1-Propanamine	Toxic, Ignitable	Listed Waste
U196	Pyridine	Toxic	Listed Waste
U197	P-Benzoquinone 2,5-Cyclohexadiene-1,4-dione	Toxic	Listed Waste
U200	Reserpine Yohimban-16-carboxylic acid, 11,17-dimethoxy-18-(3,4,5-trimethoxybenzoyl)oxy]-methyl ester, (3beta,16beta,17alpha, 18beta,20alpha)-	Toxic	Listed Waste
U201	Resorcinol 1,3-Benzenediol	Toxic	Listed Waste
U202	Saccharin and salts 1,2-Benzisothiazol-3 (2H)-one, 1,1-dioxide & salts	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U203	Safrole 1,3-Benzodioxole, 5-(2-propenyl)-	Toxic	Listed Waste
U204	Selenious acid selenium dioxide	Toxic	Listed Waste
U205	Selenium sulfide Selenium sulfide SeS2	Toxic, Reactive	Listed Waste
U206	Streptozotocin Glucopyranose, 2-deoxy-2-(3-methyl-3-nitrosoureido)-D	Toxic	Listed Waste
U207	1,2,4,5-Tetrachlorobenzene Benzene, 1,2,4,5-tetrachloro-	Toxic	Listed Waste
U208	1,1,1,2-Tetrachlorethane	Toxic	Listed Waste
U209	1,1,2,2-Tetrachloroethane	Toxic	Listed Waste
U210	Tetrachloroethene	Toxic	Listed Waste
U211	Tetrachloromethane Carbon tetrachloride	Toxic	Listed Waste
U213	Tetrahydrofuran	Ignitable	Listed Waste
U214	Thallium (I) acetate Acetic acid, thallium(1+) salt	Toxic	Listed Waste
U215	Thallium (I) carbonate Carbonic acid, dithallium (+1) salt	Toxic	Listed Waste
U216	Thallium chloride	Toxic	Listed Waste
U217	Thallium (I) nitrate Nitric acid, thallium(+1) salt	Toxic	Listed Waste
U218	Thioacetamide Ethanethioamide	Toxic	Listed Waste
U219	Thiourea	Toxic	Listed Waste
U220	Toluene Benzene, methyl-	Toxic	Listed Waste
U221	Toluenediamine Benzenediamine, ar-methyl	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U222	o-Toluidine hydrochloride Benzenamine, 2-methyl- hydrochloride	Toxic	Listed Waste
U223	Toluene diisocyanate Benzene, 1,3-diisocyanato- methy 1-	Toxic Reactive	Listed Waste
U225	Bromoform	Toxic	Listed Waste
U226	1,1,1-Trichloroethane Methyl chloroform	Toxic	Listed Waste
U227	1,1,2-Trichloroethane	Toxic	Listed Waste
U228	Trichloroethyene	Toxic	Listed Waste
U234	Sym-Trinitrobenzene Benzene, 1,3,5-trinitro-	Toxic Reactive	Listed Waste
U235	Tris(2,3-dibromopropyl) 1-Propano 1, 2,3-dibromo-, phosphate (3:1)	Toxic	Listed Waste
U236	Trypan blue 2,7-Naphthalenedisulfonic acid 3,31-[(3,31-dimethyl]1,11- biphenyl]-4-41-diyl)bis(azo) bis[5-amino-4hydroxy)-,tetrasodium salt	Toxic	Listed Waste
U237	Uracil mustard 2,4-(1H,3H)-Pyrimidinedione, 5-[bis(2-chloroethyl)amino]-	Toxic	Listed Waste
U238	Ethyl carbonate (urethane) Carbamic acid, ethyl ester	Toxic	Listed Waste
U239	Xylene Benzene, dimethyl-	Ignitable	Listed Waste
U240	Acetic acid, (2,4-dichloro phenoxy)-, salts & esters	Toxic	Listed Waste
U243	Hexachloropropene	Toxic	Listed-Waste
U244	Thiram Thioperoxydicarbonic diamide [(H2N)C(S)] 2S2, tetramethyl-	Toxic	Listed Waste
U246	Cyanogen Bromide (CN)Br	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U247	Methoxychlor Benzene, 1,11-(2,2,2-trichloroethylidene)bis (4- methoxy-	Toxic	Listed Waste
U248	Warfarin, when present at concentrations of 0.3% or less 2H-1-Benzopyran-2-one,4-hydroxy-3-(3-oxo-1-phenylbutyl)-, & salts, when present at concentrations of 0.3% or less	Toxic	Listed Waste
U249	Zinc phosphide, Zn,P, when present at concentrations of 10% or less.	Toxic	Listed Waste
U271	Benomyl	Toxic	Listed Waste
U278	Bendiocarb	Toxic	Listed Waste
U279	Carbaryl	Toxic	Listed Waste
U280	Barban	Toxic	Listed Waste
U328	o-Toluidine Benzenamine, 2-methyl-	Toxic	Listed Waste
U353	p-Toluidine Benzenamine, 4-methyl-	Toxic	Listed Waste
U359	Ethylene glycol monoethyl Ethanol, 2-ethoxy-	Toxic	Listed Waste
U364	Bendiocarb Phenol	Toxic	Listed Waste
U367	7-Benzofuranol2,3-dihydro-2,2-dimethyl-	Toxic	Listed Waste
U372	Carbamic acid, 1H-benzimidazol-2-yl, methyl ester.	Toxic	Listed Waste
U373	Carbamic acid, phenyl-,1-methylethyl ester.	Toxic	Listed Waste
U387	Carbamothioic acid, dipropyl-, S(phenylmethyl) ester.	Toxic	Listed Waste
U389	Carbamothioic acid, bis)1-methylethyl)-,S-(2,3,3-trichloro-2-propenyl) ester.	Toxic	Listed Waste
U394	A2213	Toxic	Listed Waste
U395	Diethylene glycol, dicarbamate.	Toxic	Listed Waste

TABLE C-1 (Continued)

EPA Hazardous Waste No.	Chemical	Hazard	Basis
U404	Ethanamine, N,N-diethyl-	Toxic	Listed Waste
U408	2,4,6-Tribromophenol	Toxic	Listed Waste
U409	Carbamic acid,[1,2-phenylenebis (iminocarbonothioyl)]-bis-, dimethyl ester.	Toxic	Listed Waste
U410	Ethanimidothioic acid, N,N'-[thiobis[(methylimino)carbonyl-oxy]bis,dimethyl ester.	Toxic	Listed Waste
U411	Phenol, 2-(1-methylethoxy)-, methylcarbamate.	Toxic	Listed Waste

Table C-2

Prequalification and Conformance Testing Parameters

Parameter	Purpose
Physical Description	Used to determine if the general characteristics of the waste including color, odor, viscosity, layering, free liquids, and other observable characteristics match the approved waste profile (GWMPS). This facilitates subjective comparison of the sampled waste with prior waste descriptions or samples.
pH	Used to indicate the corrosive nature of the waste. The test applies to liquids soluble in water, solids, and sludges. The test will not apply to organic solvent wastes, oil waste, insoluble, or non-aqueous solid waste. The test will be performed using pH paper with a color scale, if the waste is off-specification; the pH will be verified using a pH meter.
Water Solubility/Reactivity	Used to determine 1) if the waste is miscible in water; 2) the waste stream has the potential to vigorously react with water and/or form gases or other products; and/or 3) upon contact with water will generate significant heat. This test does not apply to wastes already in contact with water or for which significant analytical data exists to indicate no potential reactivity with water.
Ignitability Screen	Used to determine the minimum temperature at which the waste will give off enough vapor to achieve the right mixture with air such that the waste would ignite if an ignition source exists. The flash point also determines the appropriate storage conditions and the applicable requirements to treat, deactivate or separately manage ignitable wastes to ensure compliance with 40 CFR 264.198 for liquid wastes. This test applies to liquids, semi-solids and solids, excluding material that burns easily such as paper or sawdust.
Reactive Cyanide Screen	Used to determine if the waste will produce hydrogen cyanide gas upon acidification below a pH of 2. It is not required if the pH is less than 6, if the waste is not water soluble, or if the waste is not aqueous.

Reactive Sulfides Screen	Used to determine if the waste will produce hydrogen sulfide gas upon acidification below a pH of 2. It is not required if the pH of the waste is less than 6.0, if the waste is not water soluble, or if the waste is not aqueous.
Oxidizer Screen	Used to determine if the waste is an oxidizer by the use of potassium iodide litmus paper.
Radioactivity Screen	Used to determine if the waste contains radioactive materials above background levels.

Note: These are CHA screening methods. Refer to Appendix C-III

Table C-3

List of Supplemental Analyses

Parameter	Method	Purpose
Percent Acidity	305.1	Determines the acidity in the waste by species. It is only used if the waste is aqueous and has a pH of less than 7.
Percent Alkalinity	310.1	Determines the amount of alkalinity in the waste by species. It is only used if the waste is aqueous and has a pH above 7.
pH	9040C	Determines the pH.
CG/MS Scan	8260B/8261 8270D/8275A	Used to separate and identify organic compounds.
Specific Gravity	ASTM D5057-90	Indicates density of the waste (i.e., to determine suitability for solvent recovery).
Gas Chromatography Scan	SW-846	Used to separate and identify organic compounds.
Cyanides/Peroxide Amenable	8015C/8021B	Determines the effectiveness of H202 for cyanide treatment.

Table C-3

List of Supplemental Analyses

Parameter	Method	Purpose
Soluble Sulfides	9030B/9031	Provides quantitative backup to the reactive sulfides screen.
Sulfate Screen	9035/9036	Indicates sulfate presence, since a waste with high dissolved sulfates will have a tendency to precipitate.
Paint Filter Test	9095B	Indicates if free liquid is present in a solid or semi-solid material.
Toxicity Characteristic	SW-846	Uses the Toxicity Characteristic Leaching Procedure (TCLP) to determine the presence of organic chemicals described by EPA Waste Codes D004 through D043.
Hexavalent Chromium	7195/7196A 7197	To quantify the concentration of this species for treatment control.
Heavy Metals (As, Ba, Cd, Cr, Pb, Hg, Se, Ag)	SW-846	To quantify heavy metals concentration to determine process operating parameters.

Table C-3

List of Supplemental Analyses

Parameter	Method	Purpose
Miscellaneous Metals (Cu, Ca, Mg, Mn, Ni, Zn)	Sw-846	To determine potential salt precipitation and for Fe, monitoring certain processes.
Free Cyanides	9010B/9012A 9013	To measure the cyanides that would be potentially reactive under acid conditions.
Total Sulfides	9031/9034	To quantify the concentration of total sulfide.
Oil and Grease	ASTM D4281 Hach Test Kit	To quantify the amount of oil and grease so as not to impact certain processes.
Phenols	8041A	To quantify the concentration of phenols.
Flash Point	1030/1010A	To further characterizes ignitable wastes to establish proper storage mode and conformance with permit conditions. A closed cup is used for liquids, and an open cup for solids.
Water Content	9000	To determine the amount of free water or indicate the combustibility of the waste.
Polychlorinated biphenyls	8082	To quantify the PCB isomer(s) for TSCA regulatory characterization.

Sources:

1. "Test Methods for Evaluating Solid Waste", SW-846, U. S. Environmental Protection Agency, Office of Water and Waste Management, Washington, D.C.20406, 1980.

2. "Standard Methods for the Examination of Water and Waste Water", 15th edition, American Public Health Association, 1980.

3. "Annual Book of ASTM Standards, Parts 15, 19, 31, "American Society for Testing Materials, 1916 Race Street, Philadelphia, Pennsylvania, 19103.

4. "Methods of Chemical Analysis of Water and Wastes", EPA-600/4-79-020, US Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, March 1979.

5. Screening methods developed by Clean Harbors.

Wastewater methods will not be used to characterize waste.

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
Ignitable	D001	Flash Point	1010(a); D-93(d)
Corrosive	D002	pH	9040(a); 423(b); 150.1 (c); 402(b); 403(b)
Reactive	D003	Cyanide	9010(a); 412A(b); 412B(b); 412C(b); 412D(b); 412E(b); 335.2(c); 335.3(c)
	D003	Sulfide	9030(a); 427B(b); 427C(b); 427D(b); 376.1(c); 376.2(c)
Inorganic Metals	D004	Arsenic	7061(a); 7060(a); 6010(a); 303E(b); 305(b); 307A(b); 200.7(c); 206.2(c); 206.3(c); 206.4(c)
	D005	Barium	7080(a); 6010(a); 303C(b); 305(b); 200.7(c); 208.1(c)
	D006	Cadmium	7130(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 213.1(c)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
	D007	Chromium	7190(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 218.1(c)
	D008	Lead	7420(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 239.1(c)
	D009	Mercury	7470(a); 303F(b); 245.1(c); 245.2(c); 245.5(c)
	D010	Selenium	7741(a); 303E(b); 305(b); 200.7(c); 270.2(c); 270.3(c)
	D011	Silver	7760(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 272.1(c)
Organics	D018	Benzene	8020(a); 8240(a); 8260(a); 8021
	D019	Carbon tetrachloride	8010(a); 8240(a); 8260(a); 8021
	D020	Chlordane	8080(a); 8250(a); 8270(a)
	D021	Chlorobenzene	8010(a); 8020(a);8021; 8240(a); 8260(a)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
	D022	Chloroform	8010(a); 8240(a); 8260(a); 8021
	D023	o-Cresol	8040(a); 8250(a); 8270(a)
	D024	m-Cresol	8040(a); 8250(a); 8270(a)
	D025	p-Cresol	8040(a); 8250(a); 8270(a)
	D026	Cresol	8040(a); 8250(a); 8270(a)
	D027	1,4-Dichlorobenzene	8010(a); 8020(a); 8120(a); 8240(a); 8250(a); 8260(a)
	D028	1,2-Dichloroethane	8010(a); 8240(a); 8260(a)
	D029	1,1-Dichloroethylene	8010(a); 8240(a); 8260(a)
	D030	2,4-Dinitro-toluene	8090(a); 8250(a); 8270(a)
	D031	Heptachlor (and its epoxides)	8080(a); 8250(a); 8270(a)
	D032	Hexachlorobenzene	8120(a); 8250(a); 8270(a)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
	D033	Hexachloro-butadiene	8120(a); 8250(a); 8260(a); 8270(a)
	D034	Hexachloroethane	8120(a); 8250(a); 8270(a)
	D035	Methyl ethyl ketone (MEK)	8240(a)
	D036	Nitrobenzene	8090(a)
	D037	Pentachlorophenol	8090(a); 8250(a); 8270(a)
	D038	Pyridine	8240(a); 8270(a)
	D039	Tetrachloroethylene	8010(a); 8240(a); 8260(a)
	D040	Trichloroethylene	8010(a); 8240(a); 8260(a)
	D041	2,4,5-Trichloro-phenol	8040(a); 8250(a); 8270(a)
	D042	2,4,6-Trichloro-phenol	8040(a); 8250(a); 8270(a)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
	F019; K002; K003; K004; K005; K006; K007; K008; K048; K050; K051; K061; K062; K069; K086; K100; U032	(Total)	303A(b); 303B(b); 305(b); 200.7(c); 218.1(c)
	D007; F006; F019; K002; K003; K004; K005; K006; K007; K008; K048; K050; K051; K061; K062; K069; K086; K100; U032	Chromium (Hexavalent)	7196(a); 312B(b) 218.3(c); 218.4(c); 218.5(c)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
	D008; K002; K003; K005; K046; K048; K049; K051; K052; K061; K062; K069; K086; K100; U144; U145; U146	Lead	7420(a); 6010(a); 303A(b); 303B(b); 305(b); 200.7(c); 239.1(c)
	D009; K071; K106	Mercury	7470(a); 303F(b); 245.1(c); 245.2(c); 245.5(c)
	D010	Selenium	7741(a); 6010(a); 303E(b);305(b); 200.7(c);270.2(c); 270.3(c)
	D011	Silver	7760(a); 6010(a) 303A(b); 303B(b); 305(b); 200.7(c); 272.1(c)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
	F006	Nickel	7520(a); 6010(a); 303A(b); 303B(b); 305(b); 321A(b); 200.7(c); 249.1(c)
	U246	Zinc	7950(a); 6010(a); 303A(b); 303B(b); 305(b); 328A(b); 200.7(c); 289.1(c)
	F001; F002 F024; All "U" Wastes Except U144; U145; U146; U246	Volatile Organic Compounds	8010(a); 8015(a); 8020(a); 8030(a); 8240(a); 8260(a)
	F004; F024; U028; U039; U048; U049; U073; U081; U082; U088; U101; U102; U105; U107;	Various BNA Compounds (Phenols; Phthalate Esters; Cyclic Ketones; Nitro-Aromatics; Polynuclear Aromatic	8040(a); 8060(a); 8090(a); 8100(a); 8120(a); 8240(a); 8260(a)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
	U109; U111; U130; U131; U165; U169; U170; U196; U213	Hydrocarbons; and Chlorinated Hydrocarbons	
All Aqueous Wastes		Ammonia	417(a); 417B(b); 417C(b); 417D(b); 350.1(c); 350.2(c); 350.3(c)
		Copper	7210(a); 6010(a); 303A(b); 303B(b); 305(b); 313A(b); 200.7(c); 220.1(c)
		Phenol	510A(b); 510B(b); 8040(a); 8250(a); 8270(a); 420.1(c); 420.2(c); 420.3(c)
		Suspended Solids (After Bench Treatment)	209C(b); 160.1(c)
		Fluorides	413A(b); 413B(b); 413C(b)
		Settleable Solids	209F(b); 160.5(c)

Table C-4
Analytical Methods

Waste Category	EPA Hazardous Waste No.	Parameter	Analytical Method(s) (1)
		Specific Gravity	213E(b)/ D611-03
		Sulfides -Total	9030(a); 427D(b); 376.1(c); 376.2(c)
		COD	508A(b); 410.1(c); 410.2(c); 410.4(c)
		Suspended Solids	209C(b); 160.1(c)
		Oil and Grease	503B(b); 503C(b); 503A(b); 503E(b); 413.2(c); 413.2(c)
All Appropriate Wastes		Flash Point	1010(a); 1020(a); 1030 D-93(d)
All Mixed/Consolidated Wastes		Compatibility	ASTM D5058 Method A(e)
Polychlorinated Biphenyls		TSCA characterization	8082(a); 9078; 9079

(1) see Appendix C-III for inhouse methods to be used.

Method References:

a - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", 2nd or 3rd edition, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, Washington, DC, July 1982 or November 1986.

b - "Standard Methods for the Examination of Water and Wastewater", 16th edition, Americam Public Health Association, American Waterworks Association, Water Pollution Control Federation, Washington, DC, 1985.

c - "Methods for the Chemical Analysis of Water and Wastes" Publication EPA-600/4-79-020, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, OH., 1979, revised March 1983.

d - "Petroleum Products and Lubricants (I); D56-D1660", Annual Book of ASTM Standards, Volume 5.01, American Society for Testing and Materials, Philadelphia, PA. 1985.

e - "Standard Test Methods for Compatibility of Screening Analysis of Waste", ASTM Designation D5058-90, American Society for Testing and Materials, Revised 1990.

f- Screening methods developed by Clean Harbors

TABLE C-5

SAMPLING METHODS

Table C-5

Sample Collection Methods

Waste Location or Container					
Waste Type	Drum	Sacks and Bags	Other Bulk Containers	Storage Tanks or Bins	Tanker Trucks/ Tanks
Free-Flowing Liquids	Coliwasa or Thief	N/A	Coliwasa	Coliwasa or Weighted Bottle	Coliwasa or Weighted Bottle
Multi-Layered Liquids[1]	Coliwasa or Thief	N/A	Coliwasa	Coliwasa or Weighted Bottle	Coliwasa or Weighted Bottle
Slurries	Coliwasa or Thief	N/A	Coliwasa or Trier	Coliwasa or Weighted Bottle	Coliwasa or Weighted Bottle
Semi-Solid Sludges	Scoop or Trier	N/A	Scoop or Trier	Scoop or Trier	N/A
Moist Powders or Granules	Scoop or Trier	Scoop or Trier	Scoop or Trier	Scoop or Trier	N/A
Dry Powders or Granules	Scoop or Thief	Scoop or Thief	Scoop or Thief	[2]	N/A
Sand or Packed Powder and Granules	Scoop or Auger	Scoop or Auger	Scoop or Auger	Scoop or Thief	N/A
Large-Grained Solids	Scoop or Trier	Scoop or Trier	Scoop or Trier	Scoop or Trier	N/A

Table based mainly on information presented in SW-846, Third Edition, Volume II, 1986, page NINE-48.

[1] Mix contents in container well, sample, and allow phases to separate in lab.

[2] This type of sampling situation can present significant logistical sampling problems, and sampling equipment must be specifically selected or designated based on-site and waste conditions. No general statement about appropriate equipment can be made.

N/A Not applicable for this facility.

TABLE C-6

WASTE CONFIRMATION DISCREPANCIES

- Phases- any waste, which exhibits a different number of phases than the number, noted on the waste profile.
- pH- any waste which exhibits a pH value which varies more than two pH units from the value or range noted on the waste profile, or would change the dot description and/or RCRA characterization.
- Heat of combustion- any waste, which varies in heat value by more that 50 % from the value or range noted on the waste profile.
- Density- any waste whose density varies by more than 1.5 pounds/gallon as noted on the waste profile.
- Reactivity- any waste, which varies with respect to acid, base, air or water reactivity in comparison to the information, found on the waste profile.
- Ignitability- any waste, which exhibits an ignitability that differs from that, found on the waste profile.
- Metals- any waste for which metals are analyzed and the result would change the RCRA characterization.

APPENDIX C-I

GENERATOR WASTE MATERIALS PROFILE SHEET (GWMPS)

Clean Harbors
ENVIRONMENTAL SERVICES®

WASTE MATERIAL PROFILE SHEET

Clean Harbors Profile No: Blank BMS

A. GENERAL INFORMATION

GENERATOR EPA ID #/REGISTRATION #	*IND006370092*	GENERATOR NAME:	*Mead Johnson Nutrition*				
GENERATOR CODE (Assigned by Clean Harbors)	*BRI765*	CITY	*Evansville*	STATE/PROVINCE	*IN*	ZIP/POSTAL CODE	*47721*
ADDRESS *2400 Lloyd Expressway*				PHONE: *(812) 429-7936*			
CUSTOMER CODE (Assigned by Clean Harbors)	*BRI765*	CUSTOMER NAME:	*Mead Johnson Nutrition*				
ADDRESS *2400 Lloyd Expressway*		CITY	*Evansville*	STATE/PROVINCE	*IN*	ZIP/POSTAL CODE	*47721*

B. WASTE DESCRIPTION

WASTE DESCRIPTION:

PROCESS GENERATING WASTE (Please provide detailed description of process generating waste):

C. PHYSICAL PROPERTIES (at 25C or 77F)

PHYSICAL STATE	NUMBER OF PHASES/LAYERS	VISCOSITY (If liquid present)	COLOR
SOLID WITHOUT FREE LIQUID POWDER MONOLITHIC SOLID LIQUID WITH NO SOLIDS LIQUID/SOLID MIXTURE % FREE LIQUID % SETTLED SOLID % TOTAL SUSPENDED SOLID SLUDGE GAS/AEROSOL	1 2 3 % BY VOLUME (Approx.) TOP *0.00* MIDDLE *0.00* BOTTOM *0.00*	1 - 100 (e.g. Water) 101 - 500 (e.g. Motor Oil) 501 - 10,000 (e.g. Molasses) > 10,000	

ODOR	BOILING POINT °F (°C)	MELTING POINT °F (°C)	TOTAL ORGANIC CARBON
NONE MILD STRONG Describe:	<= 95 (<=35) 95 - 100 (35-38) 101 - 129 (38-54) >= 130 (>54)	< 140 (<60) 140-200 (60-93) > 200 (>93)	<= 1% 1-9% >= 10%

FLASH POINT °F (°C)	pH	SPECIFIC GRAVITY	ASH		BTU/LB (MJ/kg)
< 73 (<23) 73 - 100 (23-38) 101 -140 (38-60) 141 -200 (60-93) > 200 (>93)	<= 2 2.1 - 6.9 7 (Neutral) 7.1 - 12.4 >= 12.5	< 0.8 (e.g. Gasoline) 0.8-1.0 (e.g. Ethanol) 1.0 (e.g. Water) 1.0-1.2 (e.g. Antifreeze) > 1.2 (e.g. Methylene Chloride)	< 0.1 0.1 - 1.0 1.1 - 5.0 5.1 - 20.0	> 20 Unknown	< 2,000 (<4.6) 2,000-5,000 (4.6-11.6) 5,000-10,000 (11.6-23.2) > 10,000 (>23.2) Actual:

COMPOSITION (List the complete composition of the waste, include any inert components and/or debris. Ranges for individual components are acceptable. If a trade name is used, please supply an MSDS. Please do not use abbreviations.)

CHEMICAL	MIN	--	MAX	UOM

DOES THIS WASTE CONTAIN ANY HEAVY GAUGE METAL DEBRIS OR OTHER LARGE OBJECTS (EX., METAL PLATE OR PIPING >1/4" THICK OR >12" LONG, METAL REINFORCED HOSE >12" LONG, METAL WIRE >12" LONG, METAL VALVES, PIPE FITTINGS, CONCRETE REINFORCING BAR OR PIECES OF CONCRETE >3")? YES NO

If yes, describe, including dimensions:

DOES THIS WASTE CONTAIN ANY METALS IN POWDERED OR OTHER FINELY DIVIDED FORM? YES NO

DOES THIS WASTE CONTAIN OR HAS IT CONTACTED ANY OF THE FOLLOWING; ANIMAL WASTES, HUMAN BLOOD, BLOOD PRODUCTS, BODY FLUIDS, MICROBIOLOGICAL WASTE, PATHOLOGICAL WASTE, HUMAN OR ANIMAL DERIVED SERUMS OR PROTEINS OR ANY OTHER POTENTIALLY INFECTIOUS MATERIAL? YES NO

I acknowledge that this waste material is neither infectious nor does it contain any organism known to be a threat to human health. This certification is based on my knowledge of the material. Select the answer below that applies:

The waste was never exposed to potentially infectious material. YES NO

Chemical disinfection or some other form of sterilization has been applied to the waste. YES NO

I ACKNOWLEDGE THAT THIS PROFILE MEETS THE CLEAN HARBORS BATTERY PACKAGING REQUIREMENTS. YES NO

I ACKNOWLEDGE THAT MY FRIABLE ASBESTOS WASTE IS DOUBLE BAGGED AND WETTED. YES NO

SPECIFY THE SOURCE CODE ASSOCIATED WITH THE WASTE. SPECIFY THE FORM CODE ASSOCIATED WITH THE WASTE.

E. CONSTITUENTS

Are these values based on testing or knowledge? Knowledge Testing

If based on knowledge, please describe the rationale applied to identify and characterize the waste material (ex., include reference to Material Safety Data Sheets, process considerations, operating procedures).

Please indicate which constituents below apply. Concentrations must be entered when applicable to assist in accurate review and expedited approval of your waste profile. Please note that the total regulated metals and other constituents sections require answers.

RCRA	REGULATED METALS	REGULATORY LEVEL (mg/l)	TCLP mg/l	TOTAL	UOM	NOT APPLICABLE
D004	ARSENIC	5.0				✔
D005	BARIUM	100.0				✔
D006	CADMIUM	1.0				✔
D007	CHROMIUM	5.0				✔
D008	LEAD	5.0				✔
D009	MERCURY	0.2				✔
D010	SELENIUM	1.0				✔
D011	SILVER	5.0				✔
	VOLATILE COMPOUNDS					
D018	BENZENE	0.5				
D019	CARBON TETRACHLORIDE	0.5				
D021	CHLOROBENZENE	100.0				
D022	CHLOROFORM	6.0				
D028	1,2-DICHLOROETHANE	0.5				
D029	1,1-DICHLOROETHYLENE	0.7				
D035	METHYL ETHYL KETONE	200.0				
D039	TETRACHLOROETHYLENE	0.7				
D040	TRICHLOROETHYLENE	0.5				
D043	VINYL CHLORIDE	0.2				
	SEMI-VOLATILE COMPOUNDS					
D023	o-CRESOL	200.0				
D024	m-CRESOL	200.0				
D025	p-CRESOL	200.0				
D026	CRESOL (TOTAL)	200.0				
D027	1,4-DICHLOROBENZENE	7.5				
D030	2,4-DINITROTOLUENE	0.13				
D032	HEXACHLOROBENZENE	0.13				
D033	HEXACHLOROBUTADIENE	0.5				
D034	HEXACHLOROETHANE	3.0				
D036	NITROBENZENE	2.0				
D037	PENTACHLOROPHENOL	100.0				
D038	PYRIDINE	5.0				
D041	2,4,5-TRICHLOROPHENOL	400.0				
D042	2,4,6-TRICHLOROPHENOL	2.0				
	PESTICIDES AND HERBICIDES					
D012	ENDRIN	0.02				
D013	LINDANE	0.4				
D014	METHOXYCHLOR	10.0				
D015	TOXAPHENE	0.5				
D016	2,4-D	10.0				
D017	2,4,5-TP (SILVEX)	1.0				
D020	CHLORDANE	0.03				
D031	HEPTACHLOR (AND ITS EPOXIDE)	0.008				

OTHER CONSTITUENTS	MAX	UOM	NOT APPLICABLE
BROMINE			✔
CHLORINE			✔
FLUORINE			✔
IODINE			✔
SULFUR			✔
POTASSIUM			✔
SODIUM			✔
AMMONIA			✔
CYANIDE AMENABLE			✔
CYANIDE REACTIVE			✔
CYANIDE TOTAL			✔
SULFIDE REACTIVE			✔

HOCs

NONE
< 1000 PPM
>= 1000 PPM

PCBs

NONE
< 50 PPM
>=50 PPM

IF PCBS ARE PRESENT, IS THE WASTE REGULATED BY TSCA 40 CFR 761?

YES NO

ADDITIONAL HAZARDS

DOES THIS WASTE HAVE ANY UNDISCLOSED HAZARDS OR PRIOR INCIDENTS ASSOCIATED WITH IT, WHICH COULD AFFECT THE WAY IT SHOULD BE HANDLED?

YES NO (If yes, explain)

HOOSE ALL THAT APPLY

DEA REGULATED SUBSTANCE	EXPLOSIVE	FUMING	OSHA REGULATED CARCINOGENS
POLYMERIZABLE	RADIOACTIVE	REACTIVE MATERIAL	NONE OF THE ABOVE

Cleanharbors
ENVIRONMENTAL SERVICES®

F. REGULATORY STATUS

YES ✔ NO USEPA HAZARDOUS WASTE?

YES ✔ NO DO ANY STATE WASTE CODES APPLY?

Texas Waste Code

YES ✔ NO DO ANY CANADIAN PROVINCIAL WASTE CODES APPLY?

YES NO IS THIS WASTE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT PER 40 CFR PART 268?

LDR CATEGORY:
VARIANCE INFO:

YES NO IS THIS A UNIVERSAL WASTE?

YES NO IS THE GENERATOR OF THE WASTE CLASSIFIED AS CONDITIONALLY EXEMPT SMALL QUANTITY GENERATOR (CESQG)?

YES NO IS THIS MATERIAL GOING TO BE MANAGED AS A RCRA EXEMPT COMMERCIAL PRODUCT, WHICH IS FUEL (40 CFR 261.2 (C)(2)(II))?

YES NO DOES TREATMENT OF THIS WASTE GENERATE A F006 OR F019 SLUDGE?

YES NO IS THIS WASTE STREAM SUBJECT TO THE INORGANIC METAL BEARING WASTE PROHIBITION FOUND AT 40 CFR 268.3(C)?

YES NO DOES THIS WASTE CONTAIN VOC'S IN CONCENTRATIONS >=500 PPM?

YES NO DOES THE WASTE CONTAIN GREATER THAN 20% OF ORGANIC CONSTITUENTS WITH A VAPOR PRESSURE >= .3KPA (.044 PSIA)?

YES NO DOES THIS WASTE CONTAIN AN ORGANIC CONSTITUENT WHICH IN ITS PURE FORM HAS A VAPOR PRESSURE > 77 KPA (11.2 PSIA)?

YES NO IS THIS CERCLA REGULATED (SUPERFUND) WASTE ?

YES NO IS THE WASTE SUBJECT TO ONE OF THE FOLLOWING NESHAP RULES?

Hazardous Organic NESHAP (HON) rule (subpart G) Pharmaceuticals production (subpart GGG)

YES NO IF THIS IS A US EPA HAZARDOUS WASTE, DOES THIS WASTE STREAM CONTAIN BENZENE?

YES NO Does the waste stream come from a facility with one of the SIC codes listed under benzene NESHAP or is this waste regulated under the benzene NESHAP rules because the original source of the waste is from a chemical manufacturing, coke by-product recovery, or petroleum refinery process?

YES NO Is the generating source of this waste stream a facility with Total Annual Benzene (TAB) >10 Mg/year?

What is the TAB quantity for your facility? Megagram/year (1 Mg = 2,200 lbs)

The basis for this determination is: Knowledge of the Waste Or Test Data Knowledge Testing

Describe the knowledge :

G. DOT/TDG INFORMATION

DOT/TDG PROPER SHIPPING NAME:

H. TRANSPORTATION REQUIREMENTS

ESTIMATED SHIPMENT FREQUENCY ONE TIME WEEKLY MONTHLY QUARTERLY YEARLY OTHER

CONTAINERIZED	BULK LIQUID	BULK SOLID
0-0 CONTAINERS/SHIPMENT	GALLONS/SHIPMENT: ***0 Min -0 Max*** GAL.	SHIPMENT UOM: TON YARD
STORAGE CAPACITY:		TONS/YARDS/SHIPMENT: ***0 Min - 0 Max***
CONTAINER TYPE:		
CUBIC YARD BOX PALLET		
TOTE TANK DRUM		
OTHER: DRUM SIZE:		

I. SPECIAL REQUEST

COMMENTS OR REQUESTS:

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and attached documents is correct to the best of my knowledge. I also certify that any samples submitted are representative of the actual waste. If Clean Harbors discovers a discrepancy during the approval process, Generator grants Clean Harbors the authority to amend the profile, as Clean Harbors deems necessary, to reflect the discrepancy.

AUTHORIZED SIGNATURE	NAME (PRINT)	TITLE	DATE

APPENDIX C-II

SAMPLE LAND DISPOSAL RESTRICTIONS (LDR) FORMS

CleanHarbors®
ENVIRONMENTAL SERVICES, INC.

LDR NOTIFICATION FORM

Generator Name _____ **Manifest No.** _____

Pursuant to 40 CFR §268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Part 268 Land Disposal Restrictions (LDR).

A. GENERAL WASTE NOTIFICATION

Form Line No.	CH Profile No.	EPA Waste Codes & LDR Subcategories (if any) *List codes or use Attachment 1*	NWW	WW	Waste Constituent Notification *Check the "None" box or List Legend Constituent # or use Attachment 2*
1		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used
2		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used
3		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used
4		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used
5		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used
6		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used

B. HAZARDOUS DEBRIS NOTIFICATION

☐ This hazardous debris, as identified above on Line No(s). _____ is subject to the alternative treatment standards of 40 CFR §268.45.

The waste contains the following contaminants subject to treatment (check all that apply):

☐ Toxicity characteristic debris ☐ Debris contaminated with listed waste ☐ Cyanide reactive debris

C. CONTAMINATED SOIL NOTIFICATION & CERTIFICATION

☐ This contaminated soil, as identified above on Line No(s). 1 is subject to the alternative treatment standards of 40 CFR §268.49(c).

Complete the following: "I certify under penalty of law that I personally have examined this contaminated soil & it [☐does / ☐does not] contain listed hazardous waste & [☐does / ☐does not] exhibit a characteristic of hazardous waste & [☐is subject to / ☐complies with] soil treatment standards as provided by §268.49(c) or the universal treatment standards". *Note: Constituents subject to treatment are any constituents listed in 40 CFR §268.48 Universal Treatment Standards that are reasonably expected to be present in any given volume of contaminated soil, except fluoride, selenium, sulfides, vanadium & zinc, & are present at concentrations greater than ten times the universal treatment standard.*

D. LAB PACK (INCINERATION) NOTIFICATION & CERTIFICATION

☐ This lab pack, as identified above on Line No(s). _____ is subject to the alternative treatment standards of 40 CFR §268.42(c).

"I certify under penalty of law that I personally have examined & am familiar with the waste & that the lab pack contains only wastes that have not been excluded under Appendix IV to 40 CFR Part 268 & that this lab pack will be sent to a combustion facility in compliance with the alternative treatment standards for lab packs at 40 CFR §268.42(c). I am aware that there are significant penalties for submitting a false certification, including the possibility of fine or imprisonment".

E. EXTENSIONS & VARIANCES

☐ This waste, as identified above on Line No(s). _____ is not prohibited from land disposal & is subject to a deadline extension or variance, e.g., treatability variance, case-by-case extension. *Describe below any extension or variance that applies to this waste & include applicable dates:*

_____ _____ ____ / ____ / ____

Generator's Authorized Signature | Name & Title (Printed or Typed) | Date

CleanHarbors
ENVIRONMENTAL SERVICES, INC.

NOTIFICATION & CERTIFICATION: RESTRICTED WASTE MEETING TREATMENT STANDARDS

Generator Name **Manifest No.**

Pursuant to 40 CFR §268.7(a), I hereby notify that this shipment contains waste restricted under 40 CFR Part 268 Land Disposal Restrictions (LDR).
Basis for certification: Describe the knowledge upon which the certification is made and/or attach the most recent analytical data: ☐ Analytical data attached

A. GENERAL WASTE NOTIFICATION

Form Line No.	SK Profile No.	EPA Waste Codes & LDR Subcategories (if any) *List codes or use Attachment 1*	NWW	WW	Waste Constituent Notification *Check the "None" box or List Legend Constituent # or use Attachment 2*
1		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used
2		☐ Check if Attachment 1 has been used	☐	☐	☐ None ☐ Check if Attachment 2 has been used

B. GENERATOR WASTE CERTIFICATION

☐ *This certification applies to the waste identified above on Form Line No. _____.* "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".
☐ Check if this waste partially meets treatment standards & list the constituent(s) which require further treatment in section A above.

C. WASTE TREATMENT TECHNOLOGY & PROCESS CERTIFICATION

☐ *This certification applies to the waste identified above on Form Line No. _____.* "I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the treatment standards specified in 40 CFR §268.40 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment".
☐ Check if this waste partially meets treatment standards & list the constituent(s) which require further treatment in section A above.

D. CONTAMINATED SOIL TREATMENT TECHNOLOGY & PROCESS CERTIFICATION

☐ *This certification applies to the waste identified above on Form Line No. _____.* "I certify under penalty of law that I have personally examined & am familiar with the treatment technology & operation of the treatment process used to support this certification & believe that it has been maintained & operated properly so as to comply with treatment standards specified in 40 CFR §268.49 without impermissible dilution of the prohibited waste. I am aware there are significant penalties for submitting a false certification, including the possibility of fine & imprisonment".

E. CONCENTRATION-BASED CERTIFICATION FOR INCINERATION/FUEL SUBSTITUTION RESIDUES

☐ *This certification applies to the waste identified above on Form Line No. _____.* "I certify under penalty of law that I have personally examined & am familiar with the treatment technology & operation of the treatment process used to support this certification. Based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by combustion units as specified in 40 CFR §268.42, Table 1. I have been unable to detect the nonwastewater organic constituents, despite having used best good faith efforts to analyze for such constituents. I am aware there are significant penalties for submitting a false certification, including the possibility of fine & imprisonment". ☐ Check if this waste partially meets treatment standards & list the constituent(s) which require further treatment in section A above.

F. WASTE TREATED TO REMOVE CHARACTERISTICS (but not UHCs)

☐ *This certification applies to the waste identified above on Form Line No. _____. Note: I have identified the underlying hazardous constituents that require further treatment in Section A - Waste Constituent Notification of this form or in Attachment 2.* "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR §268.40 or §268.49 to remove the hazardous characteristic. This decharacterized waste contains underlying hazardous constituents that require further treatment to meet treatment standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine & imprisonment".

G. WASTE TREATED TO REMOVE CHARACTERISTICS & UHCs

☐ *This certification applies to the waste identified above on Form Line No. _____.* "I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR §268.40 to remove the hazardous characteristic, & that underlying hazardous constituents, as defined in §268.2(i), have been treated on-site to meet the §268.48 Universal Treatment Standards. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine & imprisonment".

H. DEBRIS TREATED TO MEET ALTERNATIVE STANDARDS

☐ *This certification applies to the waste identified above on Form Line No. _____.* "I certify under penalty of law that the debris has been treated in accordance with the requirements of 40 CFR §268.45. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine & imprisonment".

Generator's Authorized Signature	Name & Title (Printed or Typed)	Date
		____ / ____ / ____

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION FORM LDR-1 MANIFEST NO_____

THE HAZARDOUS WASTES IDENTIFIED ON THE HAZARDOUS WASTE MANIFEST IDENTIFIED ABOVE AND BEARING THE EPA HAZARDOUS WASTE CODES LISTED BELOW ARE RESTRICTED WASTES WHICH ARE PROHIBITED FROM LAND DISPOSAL WITHOUT FURTHER TREATMENT UNDER THE LAND DISPOSAL RESTRICTIONS, 40 CFR PART 268 .7 (a)(2), AND RCRA SECTION 3004(D). IN ACCORDANCE WITH 40 CFR 268.7(a), THE EPA WASTE CODE, WASTE SUBCATEGORY, AND TREATABILITY GROUPS, AS APPLICABLE, ARE INCLUDED BELOW.

INSTRUCTIONS – COMPLETE ALL SECTIONS. REFER TO PAGE 3 OF THIS FORM FOR KEY TERMS/DEFINITIONS.

Column 1 - Line Item: Enter the manifest line item number (e.g., 11a) that corresponds to the waste code(s).
Column 2 - Waste Codes/Subcategory: Check off all applicable waste codes. For D001 through D043, also check applicable subcategory; for F001 through F005, check applicable constituents.
Column 3 - Wastewater/Non-wastewater: Check off "WW" for wastewater and "Non-WW" for non-wastewaters.
Column 4 - LDR Handling Code: Circle the appropriate handling code, as follows:

1 = The waste is a characteristic hazardous waste D001, D002, D003, D004-D011, or D018-43 which is intended for treatment/disposal in a CWA system, CWA-equivalent system, or Class I SDWA system. Underlying Hazardous Constituents (UHC's) are NOT required to be identified.

1A = The waste is a characteristic hazardous waste D001 High TOC Ignitable Liquids Subcategory (i.e., greater than or equal to 10% TOC). Pursuant to 40 CFR 268.40, the waste must be treated using organic recovery (RORGS) or combustion (CMBST) technology. UHC's are NOT required to be identified.

2 = The waste is a characteristic hazardous waste D001 (other than High TOC Ignitable Liquids), D002, D003 Explosive, Water Reactive or Other Reactive subcategory, D004-D011, D012-17 non-wastewater, or D018-43 which is intended for treatment/disposal in a non-CWA system, non-CWA-equivalent system, or non-Class I SDWA system located in the United States. All UHC's which are reasonably expected to be present must be identified, except for D001 waste that is intended to be treated using organic recovery (RORGS) or combustion (CMBST) technologies. Identify UHC's by completing Sections I and IV of CHI Form LDR-1 Addendum and attach completed Addendum to this form.

3 = The waste is a characteristic (i.e., D-code) or listed (i.e., F-, K-, U-, or P-code) hazardous waste which is intended for export and treatment/disposal at a facility located outside the United States. LDR treatment standards do not apply to hazardous waste treated/disposed in a foreign country, and per USEPA guidance, the identification of UHC's (if applicable) is not required for hazardous waste that is intended to be exported. Note however that if the exported waste is subsequently returned for treatment/disposal in the United States, all applicable LDR regulations would apply and a revised LDR notification would be required.

4 = The waste meets the definition of hazardous debris pursuant to 40 CFR 268.2(h) and is intended for treatment/ disposal in compliance with the alternate debris treatment technologies of 40 CFR 268.45. In accordance with the requirements of 40 CFR 268.7(a)(2) : the contaminants subject to treatment (CSTT's) must be identified as part of this notification. Identify CSTT's by completing Section III and IV of the CHI Form LDR-1 Addendum and attach completed Addendum to this form. These constituents are being treated to comply with 40 CFR 268.45.

5 = The waste is a characteristic waste D003 Reactive Sulfide, Reactive Cyanide, or Unexploded Ordnance subcategory, a characteristic waste D012- 17 wastewater, or a listed (i.e., F-, K-, U-, or P-code) hazardous waste. UHC's are NOT required to be identified.

6 = The waste is a lab pack that is intended for incineration using the alternative lab pack treatment standard under 40 CFR 268.42(c). UHC's are NOT required to be identified; however, the generator must complete and attach the lab pack certification statement on CHI Form LDR-LP. Note that in accordance with 40 CFR Part 268 Appendix IV, lab packs which contain waste codes D009, F019, K003, K004, K005, K006, K062, K071, K100, K106, P010, P011, P012, P076, P078, U134, and U151 are not eligible for alternative lab pack treatment standard.

*** **NOTE: IF THE WASTE IS A SOIL CONTAMINATED WITH A LISTED OR CHARACTERISTIC WASTE AND THE GENERATOR WANTS TO USE THE ALTERNATE TREATMENT STANDARD FOR SOILS, CONTACT CORPORATE COMPLIANCE FOR THE APPROPRIATE LDR NOTIFICATION FORM.**

SECTION I. CHARACTERISTIC WASTES D001 THROUGH D043

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	[ ] D001 Ignitables, except High TOC subcategory	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D001 High TOC Ignitable Liquids Subcategory (Greater than or equal to 10% TOC)	[ ] Non-WW only	1A 3 6
_____	[ ] D002 Corrosives	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D003		
	[ ] Reactive Sulfide, per 261.23 (a)(5)	[ ] WW [ ] Non-WW	1 3 4 5 6
	[ ] Reactive Cyanide, per 261.23(a)(5)	[ ] WW [ ] Non-WW	1 3 4 5 6
	[ ] Explosive, per 261.23(a)(6), (7) & (8)	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Water Reactive, per 261.23(a)(2), (3) & (4)	[ ] Non-WW only	1 2 3 4 6
	[ ] Other Reactive, per 261.23(a)(1)	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Unexploded Ordnance, Emergency Response	[ ] WW [ ] Non-WW	1 3 4 5 6
_____	[ ] D004 Arsenic	[ ] WW [ ] Non-WW	1 3 4 5 6
_____	[ ] D005 Barium	[ ] WW [ ] Non-WW	1 3 4 5 6
_____	[ ] D006		
	[ ] Cadmium	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Cadmium Containing Batteries	[ ] Non-WW only	2 3 6
_____	[ ] D007 Chromium	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D008		
	[ ] Lead	[ ] WW [ ] Non-WW	1 2 3 4 6
	[ ] Lead Acid Batteries	[ ] Non-WW only	2 3 6

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION FORM LDR-1

MANIFEST NO_____

SECTION I. CHARACTERISTIC WASTES D001-43 (CONTINUED)

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	[ ] D009		
	[ ] Low Mercury, less than 260 mg/kg Mercury	[ ] WW [ ] Non-WW	1 2 3 4
	[ ] High Mercury Organic Subcategory	[ ] Non-WW only	2 3 4
	[ ] High Mercury Inorganic Subcategory	[ ] Non-WW only	2 3 4
_____	[ ] D010 Selenium	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D011 Silver	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D012 Endrin	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D013 Lindane	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D014 Methoxychlor	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D015 Toxaphene	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D016 2,4-D	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D017 2,4,5-TP (Silvex)	[ ] WW [ ] Non-WW	2 3 4 5 6
_____	[ ] D018 Benzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D019 Carbon tetrachloride	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D020 Chlordane	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D021 Chlorobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D022 Chloroform	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D023 o-Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D024 m-Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D025 p-Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D026 Cresol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D027 1,4-Dichlorobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D028 1,2-Dichloroethane	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D029 1,1-Dichloroethylene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D030 2,4-Dinitrotoluene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D031 Heptachlor (and its epoxide)	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D032 Hexachlorobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D033 Hexachlorobutadiene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D034 Hexachloroethane	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D035 Methyl ethyl ketone	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D036 Nitrobenzene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D037 Pentachlorophenol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D038 Pyridine	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D039 Tetrachloroethylene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D040 Trichloroethylene	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D041 2,4,5-Trichlorophenol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D042 2,4,6-Trichlorophenol	[ ] WW [ ] Non-WW	1 2 3 4 6
_____	[ ] D043 Vinyl Chloride	[ ] WW [ ] Non-WW	1 2 3 4 6

SECTION II. SPENT SOLVENT WASTES F001 THROUGH F005

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	[ ] F001 [ ] F002 [ ] F003 [ ] F004 [ ] F005	[ ] WW [ ] Non-WW	3 4 5 6

_____ [ ] 1. ALL F001-F005
_____ [ ] 2. Acetone
_____ [ ] 3. Benzene
_____ [ ] 4. n-Butyl alcohol
_____ [ ] 5. Carbon disulfide
_____ [ ] 6. Carbon tetrachloride
_____ [ ] 7. Chlorobenzene
_____ [ ] 8. o-Cresol
_____ [ ] 9. m-Cresol (difficult to distinguish from p-cresol)
_____ [ ] 10. p-Cresol (difficult to distinguish from m-cresol)
_____ [ ] 11. Cresol - mixed isomers (sum of o-, m- and p-cresol)

Isomers

_____ [ ] 12. Cyclohexanone
_____ [ ] 13. o-Dichlorobenzene
_____ [ ] 14. 2-Ethoxyethanol (F005 only)
_____ [ ] 15. Ethyl acetate
_____ [ ] 16. Ethyl benzene
_____ [ ] 17. Ethyl ether
_____ [ ] 18. Isobutyl alcohol
_____ [ ] 19. Methanol
_____ [ ] 20. Methylene chloride
_____ [ ] 21. Methyl ethyl ketone
_____ [ ] 22. Methyl isobutyl ketone
_____ [ ] 23. Nitrobenzene
_____ [ ] 24. 2-Nitropropane (F005 only)

_____ [ ] 25. Pyridine
_____ [ ] 26. Tetrachloroethylene
_____ [ ] 27. Toluene
_____ [ ] 28. 1,1,1-Trichloroethane
_____ [ ] 29. 1,1,2-Trichloroethane
_____ [ ] 30. Trichloroethylene
_____ [ ] 31. 1,1,2-Trichloro-1,2,2-trifluoroethane
_____ [ ] 32. Trichloromonofluoromethane
_____ [ ] 33. Xylene - mixed (sum of o-, m-, and p-xylene)

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION FORM LDR-1

MANIFEST NO_____

SECTION III. CALIFORNIA LIST WASTES

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	Hazardous waste containing one or more of the following California List constituents:	[ ] WW [ ] Non-WW	1 2 3 4 6

[ ] ALL CALIFORNIA LIST CONSTITUENTS
[ ] Liquids with nickel greater than or equal to 134 mg/l
[ ] Liquids with thallium greater than or equal to 130 mg/l
[ ] Liquids with PCB's > or = 50 ppm
[ ] Waste containing HOC's > or = 1,000 mg/kg

SECTION IV. OTHER LISTED WASTES (F006-12, F019-F028, F037-38, F039, K-, U-, AND P-CODES)

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6

[ ] CHECK HERE IF ADDITIONAL LISTED WASTE CODES ARE PRESENT. COMPLETE AND ATTACH LDR-1 CONTINUATION SHEET.
[ ] CHECK HERE IF WASTE CODE F039 (MULTISOURCE LEACHATE) IS PRESENT. IDENTIFY F039 CONSTITUENTS BY COMPLETING SECTIONS II AND IV OF CHI FORM LDR-1 ADDENDUM AND ATTACH COMPLETED ADDENDUM TO THIS FORM.

SECTION V. CONTACT NAME AND DATE

Print Name: _____ Date:_____

KEY TERMS/DEFINITIONS

CLASS I SDWA SYSTEM means a Class I deep well facility regulated under the Safe Drinking Water Act (SDWA).

CWA SYSTEM means a centralized wastewater treatment facility discharging under a Clean Water Act (CWA) permit. For example, a CWA facility would treat organic or inorganic aqueous wastes and discharge the treated effluent to the local sewer system. Examples of CWA treatment systems owned and operated by Clean Harbors include the wastewater treatment operations at Baltimore (including the CES system), Bristol, Chicago, Cincinnati and Cleveland.

CWA-EQUIVALENT SYSTEM means a "zero discharge system" that engages in "CWA-equivalent" treatment before land disposal. Zero-discharge facilities treat hazardous wastes using "CWA-equivalent" treatment methods, but do not discharge the treatment effluent to a sewer or water body (e.g., spray irrigation land farm). "CWA-equivalent" treatment methods means biological treatment for organics, alkaline chlorination, or ferrous sulfate precipitation for cyanide, precipitation/ sedimentation for metals, reduction of hexavalent chromium, or other treatment technology that can be demonstrated to perform equally or greater than these technologies.

HIGH TOC IGNITABLE LIQUIDS SUBCATEGORY means an ignitable liquid hazardous waste (waste code D001) which contains greater than or equal to 10% total organic carbon (TOC). Pursuant to 40 CFR 268.40, such wastes must be treated using organic recovery (RORGS) or combustion (CMBST) technology. Examples of RORGS technologies include the CES unit at Clean Harbors of Baltimore. Examples of CMBST technologies include hazardous waste fuel blending and subsequent reuse at a cement kiln, or destruction at a RCRA incinerator.

WASTEWATERS are wastes that contain less than 1% by weight total organic carbon (TOC) and less than 1% by weight total suspended solids (TSS). [See 40 CFR 268.2(f)]

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
CONTINUATION SHEET FOR USE WITH
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1

MANIFEST NO_____

SECTION IV. OTHER LISTED WASTES (F006-12, F019-F028, F037-38, F039, K-, U-, AND P-CODES)
CONTINUED FROM PAGE 3 OF FORM LDR-1

COLUMN 1: LINE ITEM SEE MANIFEST	COLUMN 2: WASTE CODE / SUBCATEGORY	COLUMN 3: WASTEWATER/ NON-WASTEWATER	COLUMN 4: HANDLING CODE
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6
_____	_____	[ ] WW [ ] Non-WW	3 4 5 6

CLEAN HARBORS ENVIRONMENTAL SERVICES, INC.
LAND DISPOSAL RESTRICTION NOTIFICATION FORM LDR-1 ADDENDUM Manifest No._____

SECTION I. UNDERLYING HAZARDOUS CONSTITUENTS (UHC'S)

[ ] Check here if one or more of the constituents listed in Section IV below are reasonably expected to be present as an "Underlying Hazardous Constituent" in the waste. Then in Section IV, check off each constituent. Note that per the definition of UHC in 40 CFR 268.2, fluoride, selenium, sulfides, vanadium and zinc are NOT regulated as UHC's.

[ ] Check here if NONE of the UHC constituents listed in Section IV are expected to be present in the waste.

SECTION II. MULTI-SOURCE LEACHATE (WASTE CODE F039)

[ ] Check here if one or more of the constituents listed in Section IV are present as a constituent in the multi-source leachate (F039) waste. Then in Section IV below, check off each constituent. Note that constituents which are identified by an asterisk (*) are NOT regulated as F039 constituents.

[ ] Check here if NONE of the F039 constituents listed in Section IV are present in the waste.

SECTION III. HAZARDOUS DEBRIS CONTAMINANTS SUBJECT TO TREATMENT (CSTT)

[ ] Check here if one or more of the constituents listed in Section IV is a CSTT for hazardous debris that is intended for treatment using the alternate treatment technologies in 40 CFR 268.45. To identify CSTT's, refer to the "Regulated Hazardous Constituent" column in the Treatment Standard Table in 40 CFR 268.40. Then, in Section IV below, check off the constituents that appear for each waste code used to identify the debris.

[ ] Check here if the entry in the "Regulated Hazardous Constituent" column in the Treatment Standard Table in 40 CFR 268.40 is "Not Applicable", i.e. D001, D002, and D003 (non-cyanides subcategories only).

SECTION IV. LIST OF CONSTITUENTS - INCLUDE MANIFEST LINE ITEM

34._____[ ] Acenaphthylene
35._____[ ] Acenaphthene
36._____[ ] Acetone
37._____[ ] Acetonitrile
38._____[ ] Acetophenone
39._____[ ] 2-Acetylaminofluorene
40._____[ ] Acrolein
41._____[ ] Acrylamide (*)
42._____[ ] Acrylonitrile
251._____[ ] Aldicarb sulfone (*)
43._____[ ] Aldrin
44._____[ ] 4-Aminobiphenyl
45._____[ ] Aniline
46._____[ ] Anthracene
47._____[ ] Antimony
48._____[ ] Aramite
49._____[ ] Arsenic
50._____[ ] alpha-BHC
51._____[ ] beta-BHC
52._____[ ] delta-BHC
53._____[ ] gamma-BHC
252._____[ ] Barban (*)
54._____[ ] Barium
253._____[ ] Bendiocarb (*)
255._____[ ] Benomyl (*)
55._____[ ] Benzene
56._____[ ] Benz(a)anthracene
57._____[ ] Benzal chloride (*)
58._____[ ] Benzo(b)fluoranthene (difficult to distinguish from Benzo(k)fluoranthene)
59._____[ ] Benzo(k)fluoranthene (difficult to distinguish from Benzo(b)fluoranthene)
60._____[ ] Benzo(g,h,i)perylene
61._____[ ] Benzo(a)pyrene
62._____[ ] Beryllium
63._____[ ] Bromodichloromethane
64._____[ ] Bromomethane (Methyl bromide)
65._____[ ] 4-Bromophenyl phenyl ether
66._____[ ] n-Butyl alcohol
256._____[ ] Butylate (*)
67._____[ ] Butyl benzyl phthalate
68._____[ ] 2-sec-Butyl-4,6-dinitrophenol (Dinoseb)
69._____[ ] Cadmium
257._____[ ] Carbaryl (*)
258._____[ ] Carbendazim (*)
259._____[ ] Carbofuran (*)
260._____[ ] Carbofuran phenol (*)
70._____[ ] Carbon disulfide
71._____[ ] Carbon tetrachloride
261._____[ ] Carbosulfan (*)
72._____[ ] Chlordane (alpha and gamma isomers)
73._____[ ] p-Chloroaniline
74._____[ ] Chlorobenzene
75._____[ ] Chlorobenzilate
76._____[ ] 2-Chloro-1,3-butadiene
77._____[ ] Chlorodibromomethane
78._____[ ] Chloroethane
79._____[ ] bis(2-Chloroethoxy)methane
80._____[ ] bis(2-Chloroethyl)ether
81._____[ ] Chloroform
82._____[ ] bis(2-Chloroisopropyl)ether
83._____[ ] p-Chloro-m-cresol
84._____[ ] 2-Chloroethyl vinyl ether (*)
85._____[ ] Chloromethane (Methyl Chloride)
86._____[ ] 2-Chloronaphthalene
87._____[ ] 2-Chlorophenol
88._____[ ] 3-Chloropropylene
89._____[ ] Chromium (Total)
90._____[ ] Chrysene
91._____[ ] o-Cresol
92._____[ ] m-Cresol (difficult to distinguish from p-Cresol)
93._____[ ] p-Cresol (difficult to distinguish from o-Cresol)
262._____[ ] m-Cumenyl methylcarbamate (*)
94._____[ ] Cyanides (Total)
95._____[ ] Cyanides (Amenable)
263._____[ ] Cycloate (*)
96._____[ ] Cyclohexanone
97._____[ ] 1,2-Dibromo-3-chloropropane
98._____[ ] 1,2-Dibromoethane (Ethylene dibromide)
99._____[ ] Dibromomethane
100._____[ ] 2,4-Dichlorophenoxyacetic acid (2,4-D)
101._____[ ] o,p'-DDD
102._____[ ] p,p'-DDD
103._____[ ] o,p'-DDE
104._____[ ] p,p'-DDE
105._____[ ] o,p'-DDT
106._____[ ] p,p'-DDT
107._____[ ] Dibenz(a,h)anthracene
108._____[ ] Dibenzo(a,e)pyrene
109._____[ ] m-Dichlorobenzene
110._____[ ] o-Dichlorobenzene
111._____[ ] p-Dichlorobenzene

112. _____ [ ] Dichlorodifluoromethane
113. _____ [ ] 1,1-Dichloroethane
114. _____ [ ] 1,2-Dichloroethane
115. _____ [ ] 1,1-Dichloroethylene
116. _____ [ ] trans-1,2-Dichloroethylene
117. _____ [ ] 2,4-Dichlorophenol
118. _____ [ ] 2,6-Dichlorophenol
119. _____ [ ] 1,2-Dichloropropane
120. _____ [ ] cis-1,3-Dichloropropylene
121. _____ [ ] trans-1,3-Dichloropropylene
122. _____ [ ] Dieldrin
123. _____ [ ] Diethyl phthalate
124. _____ [ ] 2,4-Dimethyl phenol
125. _____ [ ] Dimethyl phthalate
126. _____ [ ] Di-n-butyl phthalate
127. _____ [ ] 1,4-Dinitrobenzene
128. _____ [ ] 4,6-Dinitro-o-cresol
129. _____ [ ] 2,4-Dinitrophenol
130. _____ [ ] 2,4-Dinitrotoluene
131. _____ [ ] 2,6-Dinitrotoluene
132. _____ [ ] Di-n-octyl phthalate
133. _____ [ ] p-Dimethylaminoazobenzene (*)
134. _____ [ ] Di-n-propylnitrosoamine
135. _____ [ ] 1,4-Dioxane (*)
136. _____ [ ] Diphenylamine (difficult to distinguish from
137. _____ [ ] Diphenylnitrosamine (difficult to distinguish from
diphenylamine)
138. _____ [ ] 1,2-Diphenylhydrazine
139. _____ [ ] Disulfoton
266. _____ [ ] Dithiocarbamates (Total) (*)
140. _____ [ ] Endosulfan I
141. _____ [ ] Endosulfan II
142. _____ [ ] Endosulfan sulfate
143. _____ [ ] Endrin
144. _____ [ ] Endrin aldehyde
267. _____ [ ] EPTC (*)
145. _____ [ ] Ethyl acetate
146. _____ [ ] Ethyl cyanide (propanenitrile)
147. _____ [ ] Ethyl benzene
148. _____ [ ] Ethyl ether
149. _____ [ ] bis(2-Ethylhexyl)phthalate
150. _____ [ ] Ethyl methacrylate
151. _____ [ ] Ethylene oxide
152. _____ [ ] Famphur
153. _____ [ ] Fluoranthene
154. _____ [ ] Fluorene
155. _____ [ ] Fluoride
268. _____ [ ] Formetanate hydrochloride (*)
156. _____ [ ] Heptachlor
157. _____ [ ] Heptachlor epoxide
158. _____ [ ] Hexachlorobenzene
159. _____ [ ] Hexachlorobutadiene
160. _____ [ ] Hexachlorocyclopentadiene
161. _____ [ ] HxCDDs (All hexachlorodibenzo-p-dioxins)
162. _____ [ ] HxCDFs (All hexachlorodibenzo-furans)
163. _____ [ ] Hexachloroethane
164. _____ [ ] Hexachloropropylene
165. _____ [ ] Indeno (1,2,3-c,d)pyrene
270. _____ [ ] 3-Iodo-2-propynyl n-butylcarbamate (*)
166. _____ [ ] Iodomethane
167. _____ [ ] Isobutyl alcohol
168. _____ [ ] Isodrin
169. _____ [ ] Isosafrole
170. _____ [ ] Kepone
171. _____ [ ] Lead
172. _____ [ ] Mercury--Nonwastewater from Retort
173. _____ [ ] Mercury--All others
174. _____ [ ] Methacrylonitrile
175. _____ [ ] Methanol
176. _____ [ ] Methapyrilene
272. _____ [ ] Methiocarb (*)
273. _____ [ ] Methomyl (*)
177. _____ [ ] Methoxychlor
178. _____ [ ] 3-Methylcholanthrene
179. _____ [ ] 4,4-Methylene-bis(2-chloroaniline)
180. _____ [ ] Methylene chloride
181. _____ [ ] Methyl ethyl ketone
182. _____ [ ] Methyl isobutyl ketone
183. _____ [ ] Methyl methacrylate
184. _____ [ ] Methyl methansulfonate
185. _____ [ ] Methyl parathion
274. _____ [ ] Metolcarb (*)
275. _____ [ ] Mexacarbate (*)
276. _____ [ ] Molinate (*)
186. _____ [ ] Naphthalene
187. _____ [ ] 2-Naphthylamine
188. _____ [ ] Nickel
189. _____ [ ] o-Nitroaniline (*)
190. _____ [ ] p-Nitroaniline
191. _____ [ ] Nitrobenzene
192. _____ [ ] 5-Nitro-o-toluidine
193. _____ [ ] o-Nitrophenol (*)
diphenylnitrosamine)
194. _____ [ ] p-Nitrophenol
195. _____ [ ] N-Nitrosodiethylamine
196. _____ [ ] N-Nitrosodimethylamine
197. _____ [ ] N-Nitroso-di-n-butylamine
198. _____ [ ] N-Nitrosomethylethylamine
199. _____ [ ] N-Nitrosomorpholine
200. _____ [ ] N-Nitrosopiperidine
201. _____ [ ] N-Nitrosopyrrolidine
277. _____ [ ] Oxamyl (*)
202. _____ [ ] Parathion
203. _____ [ ] Total PCBs (sum of all PCB isomers, or all Arochlors)
278. _____ [ ] Pebulate (*)
204. _____ [ ] Pentachlorobenzene
205. _____ [ ] PeCDDs (All pentachlorodibenzo- p-dioxins)
206. _____ [ ] PeCDFs (All pentachlorodibenzofurans)
207. _____ [ ] Pentachloroethane (*)
208. _____ [ ] Pentachloronitrobenzene
209. _____ [ ] Pentachlorophenol
210. _____ [ ] Phenacetin
211. _____ [ ] Phenanthrene
212. _____ [ ] Phenol
213. _____ [ ] Phorate
214. _____ [ ] Phthalic acid (*)
215. _____ [ ] Phthalic anhydride
280. _____ [ ] Physostigmine (*)
281. _____ [ ] Physostigmine salicylate (*)
282. _____ [ ] Promecarb (*)
216. _____ [ ] Pronamide
283. _____ [ ] Propham (*)
284. _____ [ ] Propoxur (*)
285. _____ [ ] Prosulfocarb (*)
217. _____ [ ] Pyrene
218. _____ [ ] Pyridine
219. _____ [ ] Safrole
220. _____ [ ] Selenium
221. _____ [ ] Silver
222. _____ [ ] Silvex (2,4,5-TP)
223. _____ [ ] Sulfide
224. _____ [ ] 2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)
225. _____ [ ] 1,2,4,5-Tetrachlorobenzene
226. _____ [ ] TCDDs (All tetrachlorodibenzo- p-dioxins)
227. _____ [ ] TCDFs (All tetrachlorodibenzofurans)
228. _____ [ ] 1,1,1,2-Tetrachloroethane
229. _____ [ ] 1,1,2,2-Tetrachloroethane
230. _____ [ ] Tetrachloroethylene

231. _____[ ] 2,3,4,6-Tetrachlorophenol
232. _____[ ] Thallium
286. _____[ ] Thiodicarb (*)
287. _____[ ] Thiophanate-methyl (*)
233. _____[ ] Toluene
234. _____[ ] Toxaphene
289. _____[ ] Triallate (*)
235. _____[ ] Tribromomethane (Bromoform)
236. _____[ ] 1,2,4-Trichlorobenzene
237. _____[ ] 1,1,1-Trichloroethane
238. _____[ ] 1,1,2-Trichloroethane
239. _____[ ] Trichloroethylene
240. _____[ ] Trichloromonofluoromethane
241. _____[ ] 2,4,5-Trichlorophenol
242. _____[ ] 2,4,6-Trichlorophenol
243. _____[ ] 1,2,3-Trichloropropane
244. _____[ ] 1,1,2-Trichloro-1,2,2-trifluoroethane
290. _____[ ] Triethylamine (*)
245. _____[ ] tris-(2,3-Dibromopropyl)phosphate
246. _____[ ] Vanadium (*)
291. _____[ ] Vernolate (*)
247. _____[ ] Vinyl chloride
248. _____[ ] Xylenes--mixed isomers (sum of o-, m-, and p-xylene concentrations)
249. _____[ ] Zinc (*)

KEY TERMS/DEFINITIONS

CONTAMINANTS SUBJECT TO TREATMENT (CSTT) are the specific constituents listed by waste code number in the Treatment Standard Table in §268.40. CSTT's must be identified for all hazardous debris wastes that are intended for treatment using one of the hazardous debris alternate treatment technologies described in §268.45.

REASONABLY EXPECTED TO BE PRESENT means that the generator is relying on knowledge of the raw materials used, the process, and potential reaction products, or on the results of a one-time analysis for the entire list of UHC's that may be present in the untreated hazardous waste. If a one-time analysis of the entire list of UHC's is conducted, subsequent analyses are required for only those pollutants which would reasonably be expected to be present in the waste as generated, based on the previous sampling and analysis results.

UNDERLYING HAZARDOUS CONSTITUENT (UHC) means any constituent listed in §268.48 Table UTS - Universal Treatment Standards (except fluoride, selenium, sulfides, vanadium and zinc) which can reasonably be expected to be present at the point of generation of the hazardous waste, at a concentration above the constituent-specific UTS treatment standard. [See 40 CFR 268.2]

APPENDIX C-III

CLEAN HARBORS SCREENING METHOD

Physical Description

(can be performed at the same time as % Water visual)

1. Collect a representative sample of the waste.
2. Record the physical state and color, any layering, free liquids or other observable characteristics.
3. Example: A drum comes in coded A32
   Physical description: Oil/water – 60/40

Water Miscibility

(can be performed at the same time as pH screen and yield)

1. Collect a representative sample of the waste.
2. Transfer a small amount of the sample into a test tube half filled with water
3. Note the percentage of waste that is miscible (mixes with water); also note whether the material floats or sinks. It should also be noted if the sample sets-up in water during this screen.
4. Examples: Top layer (60%) not miscible (floats), bottom (40%) miscible **or** One layer, approximately 50% miscible

pH Screen

1. Collect a representative sample of the waste.
2. Mix a small amount of sample with water at a 1:1 ratio.
3. Place the pH paper in the resulting solution.
4. Match the color change of the pH paper to the pH color chart.
5. If pH is ≤ 2 or ≥ 12.5, but material does not carry a D002, the material is OFFC and the pH must be verified using a pH meter. (lab)

Reactive Cyanide Screen

(Can be performed at the same time as Reactive Sulfide screen)

1. Collect a representative sample of the waste

2. Place approx. 5 ml. of the sample in a test tube.

3. Remove a piece of Cyantesmo paper from the dispenser, and crimp.

4. In the fume hood, add 1 ml. concentrated sulfuric acid to the test tube and swirl to mix *(It is very important to add a small amount of sulfuric. A strong reaction can occur if the material is alkaline.)*

5. Take the Cyantesmo paper and hang it in the test tube placing the paper so that approximately 10mm of paper is actually immersed in the liquid, but making certain that part of the paper remains in the gas zone above the liquid level.

6. Just above the liquid level is the most reactive zone for the test paper. Look at this area immediately. If high concentrations of cyanide are present, it will show up quickly, but the paper may become saturated and turn back to white, so it is important that you watch closely

7. If there was no immediate indication of cyanide presence, **you must wait a minimum of 15 minutes** before it is safe to make the call that a material does not contain cyanide

8. If a blue color has developed, the sample should be considered positive for cyanide, and taken to the laboratory for further testing.

9. If the result is negative, verify that the pH of the solution is <2. If not, then repeat procedure 4-7.

Reactive Sulfide Screen

(Can be performed at the same time as Reactive Cyanide Screen)

1. Collect a representative sample of the waste.

2. Place approx. 5 ml. of the sample in a test tube.

3. Remove a piece of the lead acetate paper from the dispenser, moisten with water, and crimp.

4. In the fume hood, add 1 ml. of concentrated sulfuric acid and swirl to mix. *(It is very important to add a small amount of sulfuric. A strong reaction can occur if the material is a strong base.)*

5. Take the lead acetate paper and hang it in the test tube placing the paper in the vapor phase of the test tube, *(It is very important that the paper does not touch the liquid.)*

6. Let stand undisturbed for at least a minute.

7. If a brown or black color has developed, the sample should be considered positive for sulfides.

8. If the result is negative, verify that the pH of the solution is <2. If the pH is >2, repeat procedure 4-7.

Oxidizer Screen

1. Collect a representative sample of the waste.

2. Dip one end of a piece of KI (Potassium Iodide) starch paper into the sample. If the sample is a solid, mix dry waste with water at a 1:1 ratio.

3. If the KI paper develops a brown or black color, the sample should be considered oxidizer positive.

4. If the sample tests positive for oxidizers, see the procedure for 'Managing Positive Oxidizer Screens' located at the end of this section.

Radioactivity Screen

1. Collect a representative sample of the waste.

2. Turn on the Geiger counter and hold above sample.

3. To hear a positive result, take Geiger counter to a known source and test.

If the Geiger counter makes a sound consistent with the sound made using a known source of radiation (ECD), the sample should be considered radioactive

Ignitability Screen (Flash)

1. Collect a representative sample of the waste.

2. Under the fume hood, transfer enough waste into an aluminum burning dish to just cover the bottom of the dish.

3. Take a match and hold the flame about an inch above the material to determine whether the vapors will ignite. If the vapors ignite than the Flashpoint should be considered less than 70 degrees F.

4. If the vapors do not ignite put the lit match directly into the waste. If the waste ignites and continues to burn, the flashpoint should be considered less than 100 degrees F.

5. If the vapors do not ignite, and the waste cannot be made to burn by the introduction of a flame, then it can be assumed that the flashpoint is greater than 140 degrees F.

APPENDIX C-IV

COMPATIBILITY (BUCKET) TEST

BUCKET TEST ANALYTICAL PROCEDURE

I. PURPOSE

In order to insure that no reactions take place that may generate heat, pressure, fumes, or other hazardous by-products when waste streams are commingled in tanks or containers, it is necessary to implement procedures that assist in determining appropriate chemical compatibility. Properly identifying chemical compatibility will help insure the safety of CHA personnel, and will help preserve the integrity of CHA tanks and equipment. This procedure is based on ASTM D5058(A).

II. PROCEDURES

CHA may consolidate the contents of containers (e.g., 55-gallon drums, lab packs, trucks) into larger containers (e.g., tank trucks, 55-gallon drums, railcars) to facilitate transportation or storage.

Representative samples from each container to be consolidated will be placed into the same sample collection container (e.g., a bucket) in the order in which the containers are to be consolidated. This testing typically occurs in one of the work stations as identified on the Facility Plan Drawing or the laboratory. Signs of a reaction such as fuming, bubbling, and temperature change are noted. If no reactions occur, then approval to consolidate is given. If there are signs of reaction, the order of the consolidation of containers may change or the material may not be consolidated. Documentation is made on the attached form.

III. MATERIALS AND SUPPLIES

A. A thermometer that reads from 0 - 100 degrees Centigrade, either glass or dial type.

B. A sample collection container at least one gallon in size. (Typically, a five gallon plastic bucket.)

C. A glass sample thief (plastic if hydrofluoric acid is present), coliwasa, sampling bomb, or some

other sample collection device appropriate to getting a representative sample from every waste container.

D. Appropriate personal protective equipment for the material being handled.

IV. PROCEDURE

A. Determine whether the container in which the consolidation will occur is empty. If this container is empty, follow the procedures listed below. If the container is not empty, a representative sample of the container should be taken and placed into an empty bucket.

B. Determine if all containers being sampled are at the same temperature. If not, sample the containers from the warmest to the coolest. If containers are approximately the same temperature, sample the containers in the most convenient order. Number the containers in the order you intend to sample them.

C. Wearing appropriate protective gear (same as required for processing the waste. Minimally gloves, eyeglasses and respiratory protection are required), place a sample from the first container into the bucket along with the thermometer. The sample should be at least one half pint for drum quantities, or one pint for quantities larger than 100 gallons.

D. Make note of the temperature of the first sample. Leaving the thermometer in the bucket, obtain a sample from the second container. With your body out the way of any potential splatters, slowly add it to the bucket.

F. Make note of any splatters, bubbling, or fuming. If any of these reactions occur, or the temperature increases more than 10 degrees C, consider the materials to be incompatible and discontinue the test. If it appears that the incompatible material is only a small portion of the material to be consolidated, remove that container from the consolidation and restart the bucket test with an empty bucket. If after retesting, additional materials to be bulked are incompatible, halt operations and notify the supervisor.

G. Continue to sample the remainder of the containers, checking the bucket after every addition and making note of any reactions. The order in which the containers are sampled and the samples

consolidated must be recorded. If at any time, one of these reactions occurs, or the temperature increases more than 10 degrees C, consider the materials to be incompatible and halt bulking operations.

H. If all samples are consolidated in the bucket without incident or temperature increase, allow the bucket to sit for 15 minutes with a cover placed loosely over the top. Make note of the sample temperature and appearance after 15 minutes. If the temperature has increased more than 10 degrees C, or the sample has foamed, jelled or increased in volume, consider the materials to be incompatible and halt bulking operations.

V. CONSOLIDATION APPROVAL

The following job titles may conduct the bucket test: Facility Manager, Operations Manager, Facility Foreman, Receiving Chemist or Facility Technician. The following job titles may approve waste consolidation activities: Facility Manager, Operations Manager, Facility Foreman or Receiving Chemist.

If no reactions or temperature increases occur, the materials are acceptable for consolidation/bulking. The containers to be consolidated and their order of consolidation must be provided to the person(s) performing the consolidation. The consolidation form must be signed by one of the following personnel prior to any waste consolidation activity: Facility Manager, Operations Manager, Facility Foreman, Receiving Chemist or Facility Technician. The following job titles may approve waste consolidation activities: Facility Manager, Operations Manager, Facility Foreman or Receiving Chemist.

During consolidation activities, the person(s) conducting the consolidation should observe for any signs of reaction. In the event of any reaction, the consolidation should cease and the person(s) should contact their supervisor.

When finished, consolidation buckets with no reaction will be disposed in the same consolidated batch with the containers. If a reaction occurred, it will be characterized, containerized, labeled and

managed based on the applicable RCRA codes and hazards.

VI. FAILURE

If the materials have been determined to be incompatible, they should not be bulked together.

APPENDIX C-V

EXAMPLE DOCUMENTATION FORM

BUCKET TEST DOCUMENTATION

Date	
Person who does the testing (signature required)	
Person approving consolidation (signature required)	
Time elapsed for bucket temperature check (15 minutes required)	

Bar Code number (in order of addition)	Temperature	Sign of Reaction (Y or N)

APPENDIX C-VI

COMPATABILITY VERIFICATION DOCUMENTS

Designation: D 5058 – 90 (Reapproved 2007)

Standard Test Methods for Compatibility of Screening Analysis of Waste[1]

This standard is issued under the fixed designation D 5058; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

ASTM Method D 5058 – 90 (Reapproved 2007) is subject to copyright by ASTM.

A copy of this method is available by going to:

http://www.astm.org/Standards/D5058.htm

Designation: E 2012 – 06

Standard Guide for the Preparation of a Binary Chemical Compatibility Chart[1]

This standard is issued under the fixed designation E 2012; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

$$\overline{X} = \frac{X_1 + X_2 \cdots + X_n}{n}$$

and the variance is calculated by:

$$s^2 = \frac{\left(X_1 - \overline{X}\right)^2 + \left(X_2 - \overline{X}\right)^2 \cdots + \left(X_n - \overline{X}\right)^2}{n-1}$$

where "n" denotes the number of observations in the set of data.

The t-test uses these data summary measures to calculate a t-statistic (t*) and a comparison t-statistic (t_c). The t* value is compared to the t_c value and a conclusion reached as to whether there has been a statistically significant change in any indicator parameter.

The t-statistic for all parameters except pH and similar monitoring parameters is:

$$t^* = \frac{X_m - \overline{X}_b}{\sqrt{\frac{S_m^2}{n_m} + \frac{S_b^2}{n_b}}}$$

If the value of this t-statistic is negative then there is no significant difference between the monitoring data and background data. It should be noted that significantly small negative values may be indicative of a failure of the assumption made for test validity or errors have been made in collecting the background data.

The t-statistic (t_c), against which t* will be compared, necessitates finding t_b and t_m from standard (one-tailed) tables where,

t_b=t-tables with ($n_b - 1$) degrees of freedom, at the 0.05 level of significance.

t_m=t-tables with ($n_m - 1$) degrees of freedom, at the 0.05 level of significance.

Finally, the special weightings W_b and W_m are defined as:

$$W_B = \frac{S_b^2}{n_b} \quad \text{and} \quad W_m = \frac{S_m^2}{n_m}$$

and so the comparison t-statistic is:

$$t_c = \frac{W_b t_b + W_m t_m}{W_b + W_m}$$

The t-statistic (t*) is now compared with the comparison t-statistic (t_c) using the following decision-rule:

If *t* is equal to or larger than* t_c, then conclude that there most likely *has been a significant increase* in this specific parameter.

If *t* is less than* t_c, then conclude that most likely *there has not been a change* in this specific parameter.

The t-statistic for testing pH and similar monitoring parameters is constructed in the same manner as previously described except the negative sign (if any) is discarded and the caveat concerning the negative value is ignored. The standard (two-tailed) tables are used in the construction t_c for pH and similar monitoring parameters.

If t* is equal to or larger than t_c, then conclude that there most likely *has been a significant increase* (if the initial t* had been negative, this would imply a significant decrease). If t* is less than t_c, then conclude that there most likely has been no change.

A further discussion of the test may be found in *Statistical Methods* (6th Edition, Section 4.14) by G. W. Snedecor and W. G. Cochran, or *Principles and Procedures of Statistics* (1st Edition, Section 5.8) by R. G. D. Steel and J. H. Torrie.

STANDARD T—TABLES 0.05 LEVEL OF SIGNIFICANCE

Degrees of freedom	t-values (one-tail)	t-values (two-tail)
1	6.314	12.706
2	2.920	4.303
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228
11	1.796	2.201
12	1.782	2.179
13	1.771	2.160
14	1.761	2.145
15	1.753	2.131
16	1.746	2.120
17	1.740	2.110
18	1.734	2.101
19	1.729	2.093
20	1.725	2.086
21	1.721	2.080
22	1.717	2.074
23	1.714	2.069
24	1.711	2.064
25	1.708	2.060
30	1.697	2.042
40	1.684	2.021

Adopted from Table III of "Statistical Tables for Biological, Agricultural, and Medical Research" (1947, R. A. Fisher and F. Yates).

[47 FR 32367, July 26, 1982]

APPENDIX V TO PART 264—EXAMPLES OF POTENTIALLY INCOMPATIBLE WASTE

Many hazardous wastes, when mixed with other waste or materials at a hazardous waste facility, can produce effects which are harmful to human health and the environment, such as (1) heat or pressure, (2) fire or explosion, (3) violent reaction, (4) toxic dusts, mists, fumes, or gases, or (5) flammable fumes or gases.

Below are examples of potentially incompatible wastes, waste components, and materials, along with the harmful consequences which result from mixing materials in one group with materials in another group. The list is intended as a guide to owners or operators of treatment, storage, and disposal facilities, and to enforcement and permit granting officials, to indicate the need for special precautions when managing these potentially incompatible waste materials or components.

This list is not intended to be exhaustive. An owner or operator must, as the regulations require, adequately analyze his wastes so that he can avoid creating uncontrolled substances or reactions of the type listed below, whether they are listed below or not.

It is possible for potentially incompatible wastes to be mixed in a way that precludes a reaction (e.g., adding acid to water rather than water to acid) or that neutralizes them (e.g., a strong acid mixed with a strong base), or that controls substances produced (e.g., by generating flammable gases in a closed tank equipped so that ignition cannot occur, and burning the gases in an incinerator).

In the lists below, the mixing of a Group A material with a Group B material may have the potential consequence as noted.

GROUP 1–A

Acetylene sludge
Alkaline caustic liquids
Alkaline cleaner
Alkaline corrosive liquids
Alkaline corrosive battery fluid
Caustic wastewater
Lime sludge and other corrosive alkalies
Lime wastewater
Lime and water
Spent caustic

GROUP 1–B

Acid sludge
Acid and water
Battery acid
Chemical cleaners
Electrolyte, acid
Etching acid liquid or solvent
Pickling liquor and other corrosive acids
Spent acid
Spent mixed acid
Spent sulfuric acid

Potential consequences: Heat generation; violent reaction.

GROUP 2–A

Aluminum
Beryllium
Calcium
Lithium
Magnesium
Potassium
Sodium
Zinc powder
Other reactive metals and metal hydrides

GROUP 2–B

Any waste in Group 1–A or 1–B

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

GROUP 3–A

Alcohols
Water

GROUP 3–B

Any concentrated waste in Groups 1–A or 1–B
Calcium
Lithium
Metal hydrides
Potassium
SO_2 Cl_2, $SOCl_2$, PCl_3, CH_3 $SiCl_3$
Other water-reactive waste

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

GROUP 4–A

Alcohols
Aldehydes
Halogenated hydrocarbons
Nitrated hydrocarbons
Unsaturated hydrocarbons
Other reactive organic compounds and solvents

GROUP 4–B

Concentrated Group 1–A or 1–B wastes
Group 2–A wastes

Potential consequences: Fire, explosion, or violent reaction.

GROUP 5–A

Spent cyanide and sulfide solutions

GROUP 5–B

Group 1–B wastes

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide gas.

GROUP 6–A

Chlorates
Chlorine
Chlorites
Chromic acid
Hypochlorites
Nitrates
Nitric acid, fuming
Perchlorates
Permanganates
Peroxides
Other strong oxidizers

GROUP 6–B

Acetic acid and other organic acids

Concentrated mineral acids
Group 2–A wastes
Group 4–A wastes
Other flammable and combustible wastes

Potential consequences: Fire, explosion, or violent reaction.

SOURCE: "Law, Regulations, and Guidelines for Handling of Hazardous Waste." California Department of Health, February 1975.

[46 FR 2872, Jan. 12, 1981]

APPENDIX VI TO PART 264—POLITICAL JURISDICTIONS[1] IN WHICH COMPLIANCE WITH §264.18(a) MUST BE DEMONSTRATED

ALASKA

Aleutian Islands
Anchorage
Bethel
Bristol Bay
Cordova-Valdez
Fairbanks-Fort Yukon
Juneau
Kenai-Cook Inlet
Ketchikan-Prince of Wales
Kodiak
Lynn Canal-Icy Straits
Palmer-Wasilla-Talkeena
Seward
Sitka
Wade Hampton
Wrangell Petersburg
Yukon-Kuskokwim

ARIZONA

Cochise
Graham
Greenlee
Yuma

CALIFORNIA

All

COLORADO

Archulcta
Conejos
Hinsdale
Mineral
Rio Grande
Saguache

HAWAII

Hawaii

IDAHO

Bannock
Bear Lake
Bingham
Bonneville
Caribou
Cassia
Clark
Franklin
Fremont
Jefferson
Madison
Oneida
Power
Teton

MONTANA

Beaverhead
Broadwater
Cascade
Deer Lodge
Flathead
Gallatin
Granite
Jefferson
Lake
Lewis and Clark
Madison
Meagher
Missoula
Park
Powell
Sanders
Silver Bow
Stillwater
Sweet Grass
Teton
Wheatland

NEVADA

All

NEW MEXICO

Bernalillo
Catron
Grant
Hidalgo
Los Alamos
Rio Arriba
Sandoval
Sante Fe
Sierra
Socorro
Taos
Torrance
Valencia

UTAH

Beaver
Box Elder
Cache
Carbon
Davis
Duchesne
Emery
Garfield
Iron
Juab
Millard
Morgan
Piute
Rich
Salt Lake
Sanpete
Sevier
Summit
Tooele
Utah
Wasatch
Washington
Wayne
Weber

WASHINGTON

Chelan
Clallam
Clark
Cowlitz
Douglas
Ferry
Grant
Grays Harbor
Jefferson
King
Kitsap
Kittitas
Lewis
Mason
Okanogan
Pacific
Pierce
San Juan Islands
Skagit
Skamania
Snohomish
Thurston
Wahkiakum
Whatcom
Yakima

WYOMING

Fremont
Lincoln
Park
Sublette
Teton
Uinta
Yellowstone National Park

[46 FR 57285, Nov. 23, 1981; 47 FR 953, Jan. 8, 1982]

APPENDIXES VII–VIII TO PART 264 [RESERVED]

[1] These include counties, city-county consolidations, and independent cities. In the case of Alaska, the political jurisdictions are election districts, and, in the case of Hawaii, the political jurisdiction listed is the island of Hawaii.

(i) Throughout the entire period of unloading and while a tank car has unloading equipment attached, the facility operator must assure that the tank car is:

(1) Attended by a designated hazmat employee who is physically present and who has an unobstructed view of the unloading operation; or

(2) Monitored by a signaling system (*e.g.*, video system, sensing equipment, or mechanical equipment) that is observed by a designated hazmat employee located either in the immediate area of the tank car or at a remote location within the facility, such as a control room. The signaling system must—

(i) Provide a level of surveillance equivalent to that provided in subparagraph (1) of this paragraph (i); and

(ii) Provide immediate notification to a designated hazmat employee of any system malfunction or other emergency so that, if warranted, responsive actions may be initiated immediately.

(j) Attendance is not required when piping is attached to a top outlet of a tank car, equipped with a protective housing required under §179.100–12 of this subchapter, for discharge of lading under the following conditions:

(1) All valves are tightly closed.

(2) The piping is not connected to hose or other unloading equipment and is fitted with a cap or plug of appropriate material and construction.

(3) The piping extends no more than 15.24 centimeters (6 inches) from the outer edge of the protective housing.

(k) In the absence of the unloader, a tank car may stand with unloading connections attached when no product is being transferred under the following conditions:

(1) The facility operator must designate a hazmat employee responsible for on-site monitoring of the transfer facility. The designated hazmat employee must be made familiar with the nature and properties of the product contained in the tank car; procedures to be followed in the event of an emergency; and, in the event of an emergency, have the ability and authority to take responsible actions.

(2) When a signaling system is used in accordance with paragraph (i) of this section, the system must be capable of alerting the designated hazmat employee in the event of an emergency and providing immediate notification of any monitoring system malfunction. If the monitoring system does not have self-monitoring capability, the designated hazmat employee must check the monitoring system hourly for proper operation.

(3) The tank car and facility shutoff valves must be secured in the closed position.

(4) Brakes must be set and wheels locked in accordance with paragraph (a)(2) of this section.

(5) Access to the track must be secured in accordance with paragraph (a)(3) of this section.

(l) As soon as a tank car is completely unloaded, all valves must be made tight by the use of a bar, wrench or other suitable tool, the unloading connections must be removed and all other closures made tight.

(m) Railroad defect cards may not be removed.

(n) If oil or gasoline has been spilled on the ground around connections, it must be covered with fresh, dry sand or dirt.

(o) All tools and implements used in connection with unloading must be kept free of oil, dirt, and grit.

[Amdt. 174–26, 41 FR 16092, Apr. 15, 1976, as amended by Amdt. 174–26A, 41 FR 40685, Sept. 20, 1976; Amdt. 174–43, 48 FR 27699, June 16, 1983; Amdt. 174–68, 55 FR 52678, Dec. 21, 1990; 56 FR 66280, Dec. 20, 1991; Amdt. 174–81, 60 FR 49111, Sept. 21, 1995; Amdt. 174–83, 61 FR 28678, June 5, 1996; 68 FR 61941, Oct. 30, 2003; 70 FR 20034, Apr. 15, 2005; 72 FR 55693, Oct. 1, 2007]

§ 174.81 Segregation of hazardous materials.

(a) This section applies to materials which meet one or more of the hazard classes defined in this subchapter and are in packages which are required to be labeled or placarded under the provisions of part 172 of this subchapter.

(b) When a rail car is to be transported by vessel, other than a ferry vessel, hazardous materials on or within that rail car must be stowed and segregated in accordance with §176.83(b) of this subchapter.

(c) Except as provided in §173.12(e) of this subchapter, cyanides, cyanide mixtures or solutions may not be stored, loaded and transported with acids, and

Division 4.2 materials may not be stored, loaded and transported with Class 8 liquids.

(d) Except as otherwise provided in this subchapter, hazardous materials must be stored, loaded or transported in accordance with the following table and other provisions of this section:

SEGREGATION TABLE FOR HAZARDOUS MATERIALS

Class or Division	Notes	1.1, 1.2	1.3	1.4	1.5	1.6	2.1	2.2	2.3 gas Zone A	2.3 gas Zone B	3	4.1	4.2	4.3	5.1	5.2	6.1 liquids PG I Zone A	7	8 liquids only
Explosives ..... 1.1 and 1.2	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
Explosives 1.3		*	*	*	*	*	X		X	X	X		X	X	X	X	X		X
Explosives 1.4		*	*	*	*	*	O		O	O	O		O				O		O
Very insensitive explosives. 1.5	A	*	*	*	*	*	X	X	X	X	X	X	X	X	X	X	X	X	X
Extremely insensitive explosives. 1.6		*	*	*	*	*													
Flammable gases 2.1		X	X	O	X				X	O							O	O	
Non-toxic, non-flammable gases. 2.2		X			X														
Poisonous gas Zone A 2.3		X	X	O	X		X				X	X	X	X	X	X			X
Poisonous gas Zone B 2.3		X	X	O	X		O				O	O	O	O	O	O			O
Flammable liquids 3		X	X	O	X				X	O					O		X		
Flammable solids 4.1		X			X				X	O							X		O
Spontaneously combustible materials. 4.2		X	X	O	X				X	O							X		X
Dangerous when wet materials. 4.3		X	X		X				X	O							X		O
Oxidizers 5.1	A	X	X		X				X	O	O						X		O
Organic peroxides 5.2		X	X		X				X	O							X		O
Poisonous liquids PG I Zone A. 6.1		X	X	O	X		O				X	X	X	X	X	X			X
Radioactive materials ... 7		X			X														
Corrosive liquids 8		X	X	O	X				X	O		O	X	O	O	O	X		

(e) Instructions for using the segregation table for hazardous materials in paragraph (d) of this section are as follows:

(1) The absence of any hazard class or division, or a blank space in the table indicates that no restrictions apply.

(2) The letter "X" in the table indicates that these materials may not be loaded, transported, or stored together in the same rail car or storage facility during the course of transportation.

(3) The letter "O" in the table indicates that these materials may not be loaded, transported, or stored together in the same rail car or storage facility during the course of transportation unless separated in a manner that, in the event of leakage from packages under conditions normally incident to transportation, commingling of hazardous materials would not occur. Notwithstanding the methods of separation employed, Class 8 (corrosive) liquids may not be loaded above or adjacent to Class 4 (flammable) or Class 5 (oxidizing) materials; except that shippers may load carload shipments of such materials together when it is known that the mixture of contents would not cause a fire or a dangerous evolution of heat or gas.

(4) The "*" in the table indicates that segregation among different Class 1 (explosive) materials is governed by the compatibility table in paragraph (f) of this section.

(5) The note "A" in the second column of the table means that, notwithstanding the requirements of the letter "X", ammonium nitrate fertilizer may be loaded or stored with Division 1.1 (explosive) or Division 1.5 materials.

(6) When the § 172.101 table or § 172.402 of this subchapter requires a package to bear a subsidiary hazard label, segregation appropriate to the subsidiary hazard must be applied when that segregation is more restrictive than that required by the primary hazard. However, hazardous materials of the same class may be loaded and transported together without regard to segregation required by any secondary hazard if the materials are not capable of reacting dangerously with each other and causing combustion or dangerous evolution of heat, evolution of flammable, poisonous, or asphyxiant gases, or formation of corrosive or unstable materials.

(f) Class 1 (explosive) materials may not be loaded, transported, or stored together, except as provided in this section, and in accordance with the following table:

COMPATIBILITY TABLE FOR CLASS 1 (EXPLOSIVE) MATERIALS

Compatibility group	A	B	C	D	E	F	G	H	J	K	L	N	S
A		X	X	X	X	X	X	X	X	X	X	X	X
B	X		X	4	X	X	X	X	X	X	X	X	4/5
C	X	X		2	2	X	6	X	X	X	X	3	4/5
D	X	4	2		2	X	6	X	X	X	X	3	4/5
E	X	X	2	2		X	6	X	X	X	X	3	4/5
F	X	X	X	X	X		X	X	X	X	X	X	4/5
G	X	X	6	6	6	X		X	X	X	X	X	4/5
H	X	X	X	X	X	X	X		X	X	X	X	4/5
J	X	X	X	X	X	X	X	X		X	X	X	4/5
K	X	X	X	X	X	X	X	X	X		X	X	4/5
L	X	X	X	X	X	X	X	X	X	X	1	X	X
N	X	X	3	3	3	X	X	X	X	X	X		4/5
S	X	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	4/5	X	4/5	

(g) Instructions for using the compatibility table for Class 1 (explosive) materials in paragraph (f) of this section are as follows:

(1) A blank space in the table indicates that no restrictions apply.

(2) The letter "X" in the table indicates that explosives of different compatibility groups may not be carried on the same rail car, unless packed in separate freight containers (e.g., two or more freight containers mounted upon the same rail car).

(3) The numbers in the table mean the following:

(i) "1" means explosives from compatibility group L may only be carried

on the same rail car with an identical explosive.

(ii) "2" means any combination of explosives from compatibility group C, D, or E is assigned to compatibility group E.

(iii) "3" means any combination of explosives from compatibility group C, D, or E with those in compatibility group N is assigned to compatibility group D.

(iv) "4" means detonators and detonating primers, Division 1.4S (explosives), may not be loaded in the same car with Division 1.1 and 1.2 (explosive) materials.

(v) "5" means Division 1.4S fireworks may not be loaded in the same car with Division 1.1 or 1.2 (explosive) materials.

(vi) "6" means explosive articles in compatibility group G, other than fireworks and those requiring special stowage, may be loaded and transported with articles of compatibility groups C, D and E, provided no explosive substances are carried in the same rail car.

(h) Except as provided in paragraph (i) of this section, explosives of the same compatibility group but of different divisions may be transported together provided that the whole shipment is transported as though its entire contents were of the lower numerical division (i.e., Division 1.1 being lower than Division 1.2). For example, a mixed shipment of Division 1.2 (explosive) materials and Division 1.4 (explosive) materials, compatibility group D, must be transported as Division 1.2 (explosive) materials.

(i) When Division 1.5 materials, compatibility group D are transported in the same freight container as Division 1.2 (explosive) materials, compatibility group D, the shipment must be transported as Division 1.1 (explosive) materials, compatibility group D.

[Amdt. 174–68, 55 FR 52678, Dec. 21, 1990, as amended at 56 FR 66280–66281, Dec. 20, 1991; 57 FR 45464, Oct. 1, 1992; Amdt. 174–68, 57 FR 59310, Dec. 15, 1992; Amdt. 174–75, 58 FR 50237, Sept. 24, 1993; Amdt 174–83, 61 FR 51339, Oct. 1, 1996; 64 FR 10781, Mar. 5, 1999; 66 FR 45383, Aug. 28, 2001; 67 15743, Apr. 3, 2002; 70 FR 3310, Jan. 24, 2005]

Subpart D—Handling of Placarded Rail Cars, Transport Vehicles and Freight Containers

§ 174.82 General requirements for the handling of placarded rail cars, transport vehicles, freight containers, and bulk packages.

(a) Unless otherwise specified, this subpart does not apply to the handling of rail cars, transport vehicles, freight containers, or bulk packagings, which contain Division 1.6, combustible liquids, Division 6.1 PG III materials, Class 9 materials, or ORM-D materials.

(b) A placarded rail car, transport vehicle, freight container, or bulk package may not be transported in a passenger train.

[Amdt. 174–68, 55 FR 52680, Dec. 21, 1990, as amended at 56 FR 66281, Dec. 20, 1991; 57 FR 45464, Oct. 1, 1992; Amdt. 174–74, 58 FR 51533, Oct. 1, 1993]

§ 174.83 Switching placarded rail cars, transport vehicles, freight containers, and bulk packagings.

(a) In switching operations where the use of hand brakes is necessary—

(1) It must be determined by trial whether a loaded, placarded car, or a car occupied by a rider in a draft containing a placarded car, has its hand brakes in proper working condition before it is cut off;

(2) A loaded, placarded tank car or a draft which includes a loaded placarded tank car may not be cut off until the preceeding rail car clears the ladder track; and

(3) A loaded, placarded tank car or a draft which includes a loaded placarded tank car must clear the ladder track before another rail car is allowed to follow.

(b) Any loaded rail car placarded for a Division 1.1 or Division 1.2 explosive, a Division 2.3 Hazard Zone A gas or a Division 6.1 PG I Hazard Zone A material, or a Class DOT 113 tank car displaying a Division 2.1 (flammable gas) placard, including a Class DOT 113 tank car containing only a residue of a Division 2.1 material, may not be:

(1) Cut off while in motion;

(2) Coupled into with more force than is necessary to complete the coupling; or

APPENDIX C-VII

QUALITY ASSURANCE/ QUALITY CONTROL

Quality Assurance/ Quality Control

TABLE OF CONTENTS

POLICY/ STATEMENT OF OBJECTIVES:

The purpose of this document is to outline, identify, and describe the organization, objectives, policies and operations of the CHA laboratory. The quality assurance (QA) and quality control (QC) aspects of the laboratory practices at CHA are designed to meet the following objectives of good laboratory practices (GLP):

1. Measure the accuracy and precision of analytical results
2. Maintain an on-going assessment of the precision and accuracy of all data generated
3. Maintain and improve the quality of data generated
4. Add validity to the data generated and reported to assure that it is technically sound and legally defensible.
5. Determine the accuracy and precision of each analytical method and find ways to improve upon the methodology.
6. Facilitate and improve record keeping, storage, and retrieval.
7. Provide the protocols for data validation.
8. Assure sample integrity.
9. Improve the training of all analysts.

CHAIN OF CUSTODY

General COC

Maintenance of a strict chain of custody (COC) is not SOP for routine work. The Laboratory system has been designed to provide a clear data trail from sample login to final report distribution. We are, however, sensitive to varying needs and when requested we can tailor to a specific need which may include providing strict COC, special reporting formats, or special procedures for data retention and archival.

Internal COC

Samples, which arrive into the laboratory, are checked by the Chemist to ensure that the samples have been properly collected, preserved, and have the appropriate paperwork accompanying each sample. The samples entering the laboratory must contain the appropriate information as described in 40 CFR 261.4(d). Each sample received into the laboratory is assigned a unique bar code number. Every analyst signs and dates all paperwork, which they generate concerning a sample. All hazardous samples are properly disposed in accordance with all local, state, and federal regulations.

DATA VALIDATION

Procedures have been adopted which assure confidence that reported data is valid and that transcription errors have been eliminated.

1. All analysts maintain a Daily Log journal in which daily results are entered and kept. These daily logbooks are bound and each page is consecutively numbered.
2. All analysts utilize separate QC journals, which they are responsible for maintaining. These QC books are bound and each page is consecutively pre-numbered. QC results from duplicates, spikes, knowns, and blind samples are kept in these books for easy reference.
3. The QC journals are submitted monthly to a QC reviewer. This person will either be the General Manager or a qualified QC technician appointed by the General Manager.
4. All reports are reviewed and signed by the chemist before they are released. (maybe signed electronically)

SAMPLE HANDLING

This section is organized to describe how samples are to be handled in the field as well as in the laboratory.

Sampling Protocol

There are many problems, which may be associated with the disposal of waste. Potentially, a maze of sample collection, profiling for disposers, paper work generation, and waiting on approvals can develop. Additionally, at the last moment something may still turn up unexpected. When this occurs, a mad rush usually ensues to track, resample, retest, and resolve conflicting data.

Many of the potential problems which can arise may be attributed to sample collection and handling. To help manage the waste in a conscientious and legal manner, the following suggestions are listed:

* Metals analysis samples should be submitted in plastic containers.
* Organics analysis samples must be submitted in glass containers. Additionally, if aqueous liquid volatiles are to be analyzed, the container must be a 40 ml glass vial with a teflon septum and having no air space.
* Remember that an analyst can only analyze the sample which they are given. Therefore the sample should represent the whole waste.
* Waste Streams frequently are not homogeneous. The sampling procedure should include portions of each layer in the waste.
* When multiple drums are being sampled, equal aliquots from each of the drums should be composited with a clearly marked label.

Sample Identification

All samples received into the laboratory must be clearly identified as to the nature of the sample, who collected it and when, as well as the analyses to be run. The use of labels is the required means of providing this information.

Sample Preservation

The Chemist evaluates each sample coming into the lab to determine if appropriate

preservatives are required for each sample based on the analyses to be performed. Methods of preservation are relatively limited and are intended generally to retard biological action, retard hydrolysis of chemical compounds and complexes, and reduce volatility of constituents.

Sample Log

All samples received into the laboratory are logged into a master sample log and then assigned a unique bar code number. Samples, which are split, are assigned the same number.

Sample Storage

After the information on the sample has been properly recorded and the sample has been split and preserved, the labeled sample is then stored either at room temperature on a shelf in the sample room or refrigerated at 4°C.

Sample Tracking

Daily, the Chemist checks the list of samples due to help ensure that prompt turn around times are being met by the analysts.

Sample Disposal

After the final report has been reviewed by the Chemist and released, it is distributed. (Via paper or electronic documents) The samples are kept in the laboratory for two weeks after which they are rotated to a storage area for another two weeks. Following this, the samples are turned over to Operations for appropriate disposal. If operations desires a longer holding time an exception may be made.

Invalid Samples

In case the analyst discovers improper field preservation of a sample, a VOA vial with air bubbles, or a broken sample container, the Chemist will be notified and operations may be asked to supply another sample.

Archiving of Data

All data generated by the laboratory including COC, instrument printouts, data sheets and final reports are filed and maintained for a period of three years in the laboratory.

REAGENTS

The quality of reagents used is dictated by the specific methodology of the requested analysis. All reagents are dated and initialed by the analyst who opens them. All; mixtures, solutions, and standards in the laboratory are clearly marked as to content, date prepared, expiration date, and initials of the preparer.

GENERAL QA/QC FOR ANALYTICAL METHODS

Although the CHA Laboratory patterns its quality assurances and quality control plan after the principles set forth in the "Handbook for Analytical Quality control in Water and Wastewater Laboratories" (EPA 600/4-79-019) as well as SW846 "Test Methods for Evaluating Solid Waste", we routinely surpass the minimum guidelines suggested and actively seek to discover better ways to improve our QA/QC program.

SOP'S

Each analyst has an exact step-by-step procedure for each analysis, which the analyst routinely performs.

MAINTENANCE OF INSTRUMENTS

All maintenance done on instruments is recorded in bound notebooks, which are maintained in each department.

KNOWN QC CHECKS

Known QC check samples are analyzed for each routine parameter per week. These known samples are purchased from a source different from the sources used to purchase calibration standards and blind samples. This measure helps ensure that the analyst's method, instrument, and standards are all functioning cohesively to provide accurate and reproducible data for our clients. These results are kept in the departmental QC journals.

BLIND SAMPLES

Samples, which are made from a certified source, are submitted to the lab monthly for analysis. These samples are of an unknown concentration to everyone in the laboratory and are from a source, which is different from where the standards and knowns are purchased. This establishes a double check on the calibration standards by using three different sources. The General Manager, Compliance Manager or Operations Manager prepares these samples and submits them to the lab as a regular sample in order to check analytical departments rather than the individual analysts. This measure helps to ensure that the laboratory is maintaining reliability and dependability in the data which it generates for its clients. These results are maintained in the QC books which each department maintains as well as in the master QC journal which is kept and maintained by the lab.

Appendix A – Specific Method Procedures

METHOD 21 - DETERMINATION OF VOLATILE ORGANIC COMPOUND LEAKS

1.0 Scope and Application.

1.1 Analytes.

Analyte	CAS No.
Volatile Organic Compounds (VOC)	No CAS number assigned

1.2 Scope. This method is applicable for the determination of VOC leaks from process equipment. These sources include, but are not limited to, valves, flanges and other connections, pumps and compressors, pressure relief devices, process drains, open-ended valves, pump and compressor seal system degassing vents, accumulator vessel vents, agitator seals, and access door seals.

1.3 Data Quality Objectives. Adherence to the requirements of this method will enhance the quality of the data obtained from air pollutant sampling methods.

2.0 Summary of Method.

2.1 A portable instrument is used to detect VOC leaks from individual sources. The instrument detector type is not specified, but it must meet the specifications and performance criteria contained in Section 6.0. A leak definition concentration based on a reference compound is specified in each applicable regulation. This method is intended to locate and classify leaks only, and is not to be

used as a direct measure of mass emission rate from individual sources.

3.0 Definitions.

3.1 *Calibration gas* means the VOC compound used to adjust the instrument meter reading to a known value. The calibration gas is usually the reference compound at a known concentration approximately equal to the leak definition concentration.

3.2 *Calibration precision* means the degree of agreement between measurements of the same known value, expressed as the relative percentage of the average difference between the meter readings and the known concentration to the known concentration.

3.3 *Leak definition concentration* means the local VOC concentration at the surface of a leak source that indicates that a VOC emission (leak) is present. The leak definition is an instrument meter reading based on a reference compound.

3.4 *No detectable emission* means a local VOC concentration at the surface of a leak source, adjusted for local VOC ambient concentration, that is less than 2.5 percent of the specified leak definition concentration. that indicates that a VOC emission (leak) is not present.

3.5 *Reference compound* means the VOC species selected as the instrument calibration basis for specification of the leak definition concentration. (For example, if a leak definition concentration is 10,000 ppm as methane, then any source emission that results in a local concentration that yields a meter reading of 10,000 on an instrument meter calibrated with methane would be classified as a leak. In this example, the leak definition concentration is 10,000 ppm and the reference compound is methane.)

3.6 *Response factor* means the ratio of the known concentration of a VOC compound to the observed meter reading when measured using an instrument calibrated with the reference compound specified in the applicable regulation.

3.7 *Response time* means the time interval from a step change in VOC concentration at the input of the sampling system to the time at which 90 percent of the corresponding final value is reached as displayed on the instrument readout meter.

4.0 Interferences. [Reserved]

5.0 Safety.

5.1 Disclaimer. This method may involve hazardous materials, operations, and equipment. This test method may not address all of the safety problems associated with its

use. It is the responsibility of the user of this test method to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to performing this test method.

5.2 Hazardous Pollutants. Several of the compounds, leaks of which may be determined by this method, may be irritating or corrosive to tissues (*e.g.*, heptane) or may be toxic (*e.g.*, benzene, methyl alcohol). Nearly all are fire hazards. Compounds in emissions should be determined through familiarity with the source. Appropriate precautions can be found in reference documents, such as reference No. 4 in Section 16.0.

6.0 Equipment and Supplies.

A VOC monitoring instrument meeting the following specifications is required:

6.1 The VOC instrument detector shall respond to the compounds being processed. Detector types that may meet this requirement include, but are not limited to, catalytic oxidation, flame ionization, infrared absorption, and photoionization.

6.2 The instrument shall be capable of measuring the leak definition concentration specified in the regulation.

6.3 The scale of the instrument meter shall be readable to ±2.5 percent of the specified leak definition concentration.

6.4 The instrument shall be equipped with an electrically driven pump to ensure that a sample is provided to the detector at a constant flow rate. The nominal sample flow rate, as measured at the sample probe tip, shall be 0.10 to 3.0 l/min (0.004 to 0.1 ft^3/min) when the probe is fitted with a glass wool plug or filter that may be used to prevent plugging of the instrument.

6.5 The instrument shall be equipped with a probe or probe extension for sampling not to exceed 6.4 mm (1/4 in) in outside diameter, with a single end opening for admission of sample.

6.6 The instrument shall be intrinsically safe for operation in explosive atmospheres as defined by the National Electrical Code by the National Fire Prevention Association or other applicable regulatory code for operation in any explosive atmospheres that may be encountered in its use. The instrument shall, at a minimum, be intrinsically safe for Class 1, Division 1 conditions, and/or Class 2, Division 1 conditions, as appropriate, as defined by the example code. The instrument shall not be operated with any safety device, such as an exhaust flame arrestor, removed.

7.0 Reagents and Standards.

7.1 Two gas mixtures are required for instrument calibration and performance evaluation:

7.1.1 Zero Gas. Air, less than 10 parts per million by volume (ppmv) VOC.

7.1.2 Calibration Gas. For each organic species that is to be measured during individual source surveys, obtain or prepare a known standard in air at a concentration approximately equal to the applicable leak definition specified in the regulation.

7.2 Cylinder Gases. If cylinder calibration gas mixtures are used, they must be analyzed and certified by the manufacturer to be within 2 percent accuracy, and a shelf life must be specified. Cylinder standards must be either reanalyzed or replaced at the end of the specified shelf life.

7.3 Prepared Gases. Calibration gases may be prepared by the user according to any accepted gaseous preparation procedure that will yield a mixture accurate to within 2 percent. Prepared standards must be replaced each day of use unless it is demonstrated that degradation does not occur during storage.

7.4 Mixtures with non-Reference Compound Gases. Calibrations may be performed using a compound other than

the reference compound. In this case, a conversion factor must be determined for the alternative compound such that the resulting meter readings during source surveys can be converted to reference compound results.

8.0 Sample Collection, Preservation, Storage, and Transport.

8.1 Instrument Performance Evaluation. Assemble and start up the instrument according to the manufacturer's instructions for recommended warmup period and preliminary adjustments.

8.1.1 Response Factor. A response factor must be determined for each compound that is to be measured, either by testing or from reference sources. The response factor tests are required before placing the analyzer into service, but do not have to be repeated at subsequent intervals.

8.1.1.1 Calibrate the instrument with the reference compound as specified in the applicable regulation. Introduce the calibration gas mixture to the analyzer and record the observed meter reading. Introduce zero gas until a stable reading is obtained. Make a total of three measurements by alternating between the calibration gas and zero gas. Calculate the response factor for each repetition and the average response factor.

8.1.1.2 The instrument response factors for each of the individual VOC to be measured shall be less than 10 unless otherwise specified in the applicable regulation. When no instrument is available that meets this specification when calibrated with the reference VOC specified in the applicable regulation, the available instrument may be calibrated with one of the VOC to be measured, or any other VOC, so long as the instrument then has a response factor of less than 10 for each of the individual VOC to be measured.

8.1.1.3 Alternatively, if response factors have been published for the compounds of interest for the instrument or detector type, the response factor determination is not required, and existing results may be referenced. Examples of published response factors for flame ionization and catalytic oxidation detectors are included in References 1-3 of Section 17.0.

8.1.2 Calibration Precision. The calibration precision test must be completed prior to placing the analyzer into service and at subsequent 3-month intervals or at the next use, whichever is later.

8.1.2.1 Make a total of three measurements by alternately using zero gas and the specified calibration gas. Record the meter readings. Calculate the average algebraic difference between the meter readings and the

known value. Divide this average difference by the known calibration value and multiply by 100 to express the resulting calibration precision as a percentage.

8.1.2.2 The calibration precision shall be equal to or less than 10 percent of the calibration gas value.

8.1.3 Response Time. The response time test is required before placing the instrument into service. If a modification to the sample pumping system or flow configuration is made that would change the response time, a new test is required before further use.

8.1.3.1 Introduce zero gas into the instrument sample probe. When the meter reading has stabilized, switch quickly to the specified calibration gas. After switching, measure the time required to attain 90 percent of the final stable reading. Perform this test sequence three times and record the results. Calculate the average response time.

8.1.3.2 The instrument response time shall be equal to or less than 30 seconds. The instrument pump, dilution probe (if any), sample probe, and probe filter that will be used during testing shall all be in place during the response time determination.

8.2 Instrument Calibration. Calibrate the VOC monitoring instrument according to Section 10.0.

8.3 Individual Source Surveys.

8.3.1 Type I - Leak Definition Based on Concentration. Place the probe inlet at the surface of the component interface where leakage could occur. Move the probe along the interface periphery while observing the instrument readout. If an increased meter reading is observed, slowly sample the interface where leakage is indicated until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately two times the instrument response time. If the maximum observed meter reading is greater than the leak definition in the applicable regulation, record and report the results as specified in the regulation reporting requirements. Examples of the application of this general technique to specific equipment types are:

8.3.1.1 Valves. The most common source of leaks from valves is the seal between the stem and housing. Place the probe at the interface where the stem exits the packing gland and sample the stem circumference. Also, place the probe at the interface of the packing gland take-up flange seat and sample the periphery. In addition, survey valve housings of multipart assembly at the surface of all interfaces where a leak could occur.

8.3.1.2 Flanges and Other Connections. For welded flanges, place the probe at the outer edge of the flange-gasket interface and sample the circumference of the flange.

Sample other types of nonpermanent joints (such as threaded connections) with a similar traverse.

8.3.1.3 Pumps and Compressors. Conduct a circumferential traverse at the outer surface of the pump or compressor shaft and seal interface. If the source is a rotating shaft, position the probe inlet within 1 cm of the shaft-seal interface for the survey. If the housing configuration prevents a complete traverse of the shaft periphery, sample all accessible portions. Sample all other joints on the pump or compressor housing where leakage could occur.

8.3.1.4 Pressure Relief Devices. The configuration of most pressure relief devices prevents sampling at the sealing seat interface. For those devices equipped with an enclosed extension, or horn, place the probe inlet at approximately the center of the exhaust area to the atmosphere.

8.3.1.5 Process Drains. For open drains, place the probe inlet at approximately the center of the area open to the atmosphere. For covered drains, place the probe at the surface of the cover interface and conduct a peripheral traverse.

8.3.1.6 Open-ended Lines or Valves. Place the probe inlet at approximately the center of the opening to the atmosphere.

8.3.1.7 Seal System Degassing Vents and Accumulator Vents. Place the probe inlet at approximately the center of the opening to the atmosphere.

8.3.1.8 Access door seals. Place the probe inlet at the surface of the door seal interface and conduct a peripheral traverse.

8.3.2 Type II - "No Detectable Emission". Determine the local ambient VOC concentration around the source by moving the probe randomly upwind and downwind at a distance of one to two meters from the source. If an interference exists with this determination due to a nearby emission or leak, the local ambient concentration may be determined at distances closer to the source, but in no case shall the distance be less than 25 centimeters. Then move the probe inlet to the surface of the source and determine the concentration as outlined in Section 8.3.1. The difference between these concentrations determines whether there are no detectable emissions. Record and report the results as specified by the regulation. For those cases where the regulation requires a specific device installation, or that specified vents be ducted or piped to a control device, the existence of these conditions shall be visually confirmed. When the regulation also requires that no detectable emissions exist, visual observations and sampling surveys are required. Examples of this technique are:

8.3.2.1 Pump or Compressor Seals. If applicable, determine the type of shaft seal. Perform a survey of the local area ambient VOC concentration and determine if detectable emissions exist as described in Section 8.3.2.

8.3.2.2 Seal System Degassing Vents, Accumulator Vessel Vents, Pressure Relief Devices. If applicable, observe whether or not the applicable ducting or piping exists. Also, determine if any sources exist in the ducting or piping where emissions could occur upstream of the control device. If the required ducting or piping exists and there are no sources where the emissions could be vented to the atmosphere upstream of the control device, then it is presumed that no detectable emissions are present. If there are sources in the ducting or piping where emissions could be vented or sources where leaks could occur, the sampling surveys described in Section 8.3.2 shall be used to determine if detectable emissions exist.

8.3.3 Alternative Screening Procedure.

8.3.3.1 A screening procedure based on the formation of bubbles in a soap solution that is sprayed on a potential leak source may be used for those sources that do not have continuously moving parts, that do not have surface temperatures greater than the boiling point or less than the freezing point of the soap solution, that do not have open areas to the atmosphere that the soap solution cannot

bridge, or that do not exhibit evidence of liquid leakage. Sources that have these conditions present must be surveyed using the instrument technique of Section 8.3.1 or 8.3.2.

8.3.3.2 Spray a soap solution over all potential leak sources. The soap solution may be a commercially available leak detection solution or may be prepared using concentrated detergent and water. A pressure sprayer or squeeze bottle may be used to dispense the solution. Observe the potential leak sites to determine if any bubbles are formed. If no bubbles are observed, the source is presumed to have no detectable emissions or leaks as applicable. If any bubbles are observed, the instrument techniques of Section 8.3.1 or 8.3.2 shall be used to determine if a leak exists, or if the source has detectable emissions, as applicable.

9.0 Quality Control.

Section	Quality Control Measure	Effect
8.1.2	Instrument calibration precision check	Ensure precision and accuracy, respectively, of instrument response to standard
10.0	Instrument calibration	

10.0 Calibration and Standardization.

10.1 Calibrate the VOC monitoring instrument as follows. After the appropriate warmup period and zero

internal calibration procedure, introduce the calibration gas into the instrument sample probe. Adjust the instrument meter readout to correspond to the calibration gas value.

NOTE: If the meter readout cannot be adjusted to the proper value, a malfunction of the analyzer is indicated and corrective actions are necessary before use.

11.0 Analytical Procedures. [Reserved]

12.0 Data Analyses and Calculations. [Reserved]

13.0 Method Performance. [Reserved]

14.0 Pollution Prevention. [Reserved]

15.0 Waste Management. [Reserved]

16.0 References.

1. Dubose, D.A., and G.E. Harris. Response Factors of VOC Analyzers at a Meter Reading of 10,000 ppmv for Selected Organic Compounds. U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2-81051. September 1981.

2. Brown, G.E., *et al.* Response Factors of VOC Analyzers Calibrated with Methane for Selected Organic Compounds. U.S. Environmental Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2-81-022. May 1981.

3. DuBose, D.A. *et al.* Response of Portable VOC Analyzers to Chemical Mixtures. U.S. Environmental

Protection Agency, Research Triangle Park, NC. Publication No. EPA 600/2-81-110. September 1981.

4. Handbook of Hazardous Materials: Fire, Safety, Health. Alliance of American Insurers. Schaumberg, IL. 1983.

17.0 Tables, Diagrams, Flowcharts, and Validation Data.

[Reserved]