

**RADIATION CONTROL DIVISION
PROCEDURE**

BROOKHAVEN NATIONAL LABORATORY

Procedure No. **RM-SOP-62B**

Revision No. 0

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DISPOSAL OF HAZARDOUS WASTE

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1.0 PURPOSE/SCOPE

1.1 Principle

This procedure describes the administrative controls on the preparation of hazardous waste (generated from chemical analyses) for disposal. This procedure applies to all personnel generating or disposing of hazardous and mixed waste in the Analytical Services Laboratory. Samples remaining after chemical analysis are not considered as waste and are returned to the customer.

1.2 Summary

It is the policy of the Analytical Services Laboratory (ASL) to minimize the amount of hazardous waste generated, and to segregate, package, store, and document hazardous waste in accordance with ES&H Standard 6.2.0, 6.2.1, 6.2.2 and 6.3.0. It is also the policy of the ASL to prepare mixed waste to be disposed of at the Hanford Burial Site according to the stringent controls set by that facility.

2.0 RESPONSIBILITIES

2.1 It is the responsibility of each generator to:

- 2.1.1 First, be in compliance with the training prerequisite. See section: 4.1
- 2.1.2 Review the SBMS online site to verify any changes in this procedure. Go to <https://www.sbms.bnl.gov>, enter Subjects in the search box, then scroll down to Hazardous Waste Management. You can also find printable forms at this site.
- 2.1.3 Consult with the ECR (Environmental Compliance Representative) for samples that don't fall under the sample types described later in this procedure.
- 2.1.4 Maintain his/her own individual waste.
- 2.1.5 Minimize the production of hazardous waste.
- 2.1.6 Dispose of hazardous waste into designated containers.
- 2.1.7 Process all paperwork for analysis and disposal of hazardous waste.
- 2.1.8 Forward necessary forms to the Waste Management Group.

3.0 DEFINITIONS

(For additional definitions, see [Definitions](#)).

- 3.1 Hazardous Waste Control Form– A waste-tracking document that is completed by waste generators for each container/package of hazardous waste and used by the Waste Management Division to track hazardous waste from pickup to final disposition. HWCFs are identified with unique, sequential serial numbers.
- 3.2 Acutely Hazardous Waste - Any waste regulated under Section 371.4(d)(5) of Title 6 of the New York Codes, Rules, and Regulations (6NYCRR) **OR** any waste regulated under Section 371.4(b) and 371.4(c) with "H" Hazard Code in 6NYCRR.

- 3.3 Industrial waste - Any liquid, gas, or solid waste resulting from an industrial process that may cause pollution. Industrial waste is not regulated as hazardous waste, but requires local or State approval for disposal to a landfill or resource recovery facility. Examples include non-hazardous waste oil, oil spill debris, ion exchange resin columns, and non-friable asbestos.
- 3.4 Hazardous Materials - waste containing a hazardous substance.
- 3.5 Mixed Waste - Low-Level Radioactive Waste (LLRW) that also contains hazardous waste.
- 3.6 Hazardous Waste - A by-product of certain processes and activities that can pose a substantial or potential hazard to human health or the environment when improperly managed. Hazardous waste possesses at least one of four characteristics (ignitability, corrosivity, reactivity, and toxicity), or appears on special EPA lists. Mixed waste must be disposed according to hazardous and radioactive waste protocols.
- 3.7 Waste Characterization - the process of identifying the physical and isotopic content of a quantity of hazardous waste.
- 3.8 90-Day Accumulation Area - a source of hazardous waste of consistent physical and isotopic content.
- 3.9 Generator - any individual responsible for the production of hazardous/mixed waste.
- 3.10 Process Knowledge Certification Form (PKCF) - A form that is completed by waste generators for each package/container of hazardous waste to certify that the hazardous waste is not radioactive. The PKCF is attached to the accompanying Hazardous Waste Control Form (HWCF).
- 3.11 Resource Conservation and Recovery Act (RCRA) - The Federal law originally passed in 1976 and amended in 1984 that, in part, addressed the generation, treatment, storage, and disposal of hazardous wastes in order to protect human health and the environment.
- 3.12 Satellite Accumulation Area - A RCRA-regulated area designated as the initial point of accumulation for any hazardous wastes generated. Each Satellite Accumulation Area shall be located at or near the point in a process or facility where hazardous waste is generated. No more than a total of 55 gallons (7.5 cubic feet or 210 liters) of hazardous waste OR one quart (950 milliliters) of acutely hazardous waste shall be stored within each Satellite Area. Each waste stream resulting from a specific process may have its own Satellite Accumulation Area.
- 3.13 Empty Containers of Hazardous Waste - A container is empty when all wastes have been removed from the container (using practices commonly employed to remove materials from that type of container, e.g., pouring, pumping, and aspirating), so that no more than 3%

(0.3% for containers greater than 110 gallons) by weight of the total capacity remains in the container. A good rule of thumb is that less than one inch of residue can remain in a 55 gallon drum. A cylinder holding compressed gas is empty when the internal pressure approaches atmospheric pressure.

Note: This definition does **not** apply to acutely hazardous wastes. Empty containers of acutely hazardous wastes **must** be treated as hazardous.

- 3.14 Hazard Class - Classification of a hazardous material or waste based on its primary hazardous characteristic. Hazard Classes include acids, bases, flammables, oxidizers, air reactives, water reactives, poisons/toxics (pesticides, inhalation hazards, cyanides), organic peroxides. A material may meet the defining criteria for more than one hazard class, but is assigned to only one hazard class (see also the Hazard Class exhibit).

4.0 PREREQUISITES

4.1 Training

(For further information on training, contact the Waste Management Engineer.)

- 4.1.1 Hazardous Waste Generator (RCR-I-GEN) To ensure that you are within the one-year qualification period for course RCR-I-GEN, consult the [Environment, Safety, and Health Services Training Database](#).
- 4.1.2 Radiological Worker I (HP-RWT-002) – for mixed waste generation
- 4.1.3 Radioactive Waste Generator (HP-RADIGEN) – for mixed waste generation
- 4.1.4 90 Day Area Managers - RCRA 90 Day (HP-RCRA90DAY) – for 90 Day Accumulation Area Managers

4.2 Materials

- 4.2.1 Hazardous waste container - either bag, bottle or jug.
- 4.2.2 Analytical Services Laboratory Chain of Custody Form. See Attachment 8.2
- 4.2.3 Sample preparation materials, if appropriate.
- 4.2.4 Hazardous Waste Control Form.
- 4.2.5 Hazardous waste tag.
- 4.2.6 Process Knowledge Certification Form (PKCF).

4.3 Sample Collection

- 4.3.1 Water Sample Collection
- 4.3.1.1 Review all analytical data.
- 4.3.1.2 Acquire all aliquots and original samples.
- 4.3.1.3 Dispose of non-hazardous samples via the Laboratory sink.
- 4.3.1.4 Composite into mixed waste jug any sample classified as hazardous and radioactive waste.
- 4.3.1.5 Composite hazardous water samples into a hazardous waste jug.
- 4.3.1.6 Seal jug when water level reaches fill line.
- 4.3.1.7 Follow Procedure 6.0

5.0 PRECAUTIONS

5.1 Interferences

See appropriate analytical method to determine possible interferences.

5.2 Safety

- 5.2.1 Wear personal protective clothing including lab coat, disposable plastic gloves, and safety glasses.
- 5.2.2 Protect all surfaces from hazardous waste with either an absorbent pad or plastic backed paper.
- 5.2.3 Materials containing hazardous substances shall only be placed into appropriate containers.

6.0 PROCEDURE

6.1 Place waste in a container that is compatible with the waste's characteristics. Composite waste, if possible. Refer to following subsections. (For advice on container/waste compatibility, see the Examples of Incompatible Chemicals exhibit).

6.1.1 Collect hazardous wastes only in containers that are in good condition, without any holes, dents, or other faults that might impair proper containment, and that are made of, or lined with, a material that is compatible with the hazardous waste to be stored. Wine bottles, juice bottles, flasks, beakers, and similar containers are not appropriate waste containers. Store waste only in a clean container that has not previously contained an incompatible substance.

6.1.2 Label the container with the words "Hazardous Waste" as well as with a description of the contents, including major chemical constituents (see the Hazardous Waste Label exhibit).

Note: to prevent the inadvertent labeling of hazardous wastes as non-hazardous, the use of "non-hazardous" labels is restricted unless prior approval has been obtained from the Waste Management Division.

6.1.3 Analyze any unknown or composited samples.

6.1.4 Store the waste in the appropriate satellite accumulation area. See the appropriate subject areas in the SBMS.

6.2 When the container is full, move it to the 90-day accumulation area. Before the waste is put into a 90-day accumulation area, the following steps must be taken:

6.2.1 Complete the Hazardous Waste Control Form. Clearly print the following general information, in the designated fields:

6.2.1.1 Generator: (print name)

6.2.1.2 Life/Guest number

6.2.1.3 Department/Division

6.2.1.4 Building and room number of the waste's origin

6.2.1.5 Placement Date: the date that the waste was placed into the 90-

Day Accumulation Area

6.2.1.6 Accumulation Area Building: the Accumulation Area's building number

6.2.2 Identify the quantity of waste, including the following items:

6.2.2.1 Number and type of packages: Only identical waste types packaged in similar packages can be recorded on a single Hazardous Waste Control Form.

6.2.2.2 Volume and Weight of waste: Specify volume in gallons if a liquid or in cubic feet if a solid and specify weight in pounds.

6.2.2.3 Request package return: returns may not be possible, depending on waste type.

6.2.3 Characterize the waste based on your knowledge of the process that created it.

6.2.3.1 Chemical Name: Print, do not use chemical formula.

6.2.3.2 Describe the process that generated the waste: in simple general terms.

6.2.3.4 List the volumetric percentages of waste constituents if it is a mixture.

6.2.3.5 Check off the waste's physical state.

6.2.3.6 Complete the sections regarding the existence of PCBs in the waste, and the waste's ignitability, corrosivity, reactivity, and toxicity

6.2.3.7 Check off any constituents known to be present in the waste that are listed on the Hazardous Waste Control Form's table.

6.2.3.8 List any special hazards and precautions for handling the waste (see the MSDS).

6.2.4 Sign and date the certification statement on the bottom of the Hazardous Waste Control Form.

6.3 On the Process Knowledge Certification Form, clearly print the following information:

6.3.1 Transfer the Hazardous Waste Control Form number onto the Process Knowledge Certification Form where shown.

6.3.2 Respond to each question regarding the possible radioactivity of the waste.

6.3.3 If the waste has NOT been in a Radioactive Material Control Area, then sign certification statement A and forward both forms to the Waste Management Division. If the waste has been in a Radioactive Material Control Area, but is believed to be NEITHER radioactively contaminated nor activated, check off the appropriate box(es), sign certification statement A, and forward both forms to your Facility's Support Safety Representative.

6.3.4 If the waste has been in a Radioactive Material Control Area or may be either radioactively contaminated or activated, analyze the waste for suspected radionuclides to verify the waste is not radioactively contaminated

or activated.

6.3.5 Attach the analytical report(s) to the HWCF and PKCF.

- 6.5 If the waste contains both hazardous and radioactive contaminants, it is mixed waste. See the SBMS subject areas concerning Radioactive Waste Management, and the ASL SOP on Radioactive Waste Disposal.
- 6.4 Submit the Hazardous Waste Control Form and Process Knowledge Certification Form to the 90-Day Accumulation Area Manager.
- 6.5 Notify and obtain approval from the 90-Day Accumulation Area Manager prior to placement of waste into the Area.

7.0 REFERENCES

Refer to [Hazardous Waste Management](#) subject area.

- 7.1 ESH Standard 6.2.0 Hazardous Chemical Waste Minimization and Disposal, Hazardous Waste Management (SBMS Subject Area), Pollution Prevention and Waste Minimization (SBMS Subject Area)
- 7.2 ESH Standard 6.2.1 Accumulating RCRA Hazardous Waste, Hazardous Waste Management (SBMS Subject Area), Mixed Waste Management (SBMS Subject Area)
- 7.3 ESH Standard 6.2.2 Radioactive Waste Management, Mixed Waste Management (SBMS Subject Area), Radioactive Waste Management (SBMS Subject Area)
- 7.4 ESH Standard 6.3.0 Control, Use and Disposal of Polychlorinated Biphenyls (PCBs) (SBMS Subject Area)

8.0 ATTACHMENTS (need hyperlinks)

- 8.1 Hazardous Waste Control Form (HWCF)
- 8.2 Process Knowledge Certification Form (PKCF)

9.0 DOCUMENTATION

- 9.1 The RCD Analytical Services Laboratory as described in DH-ADM-02, Management, Retrieval and Retention of RCD Records maintains the following documents:

- 9.1.1 Analytical Services Laboratory Chain of Custody Form
- 9.1.2 Hazardous Waste Control Form, working copy
- 9.1.3 Radioactive Waste Pending Disposal (RWPD) Log Book

- 9.2 The following file codes will be used to maintain all noted records:

Refer to ESHQ Records Management Procedures Key to Filing Codes; Attachment 6.2 of SOP DH-ADM-002.

- 9.2.1 ASL COC
- 9.2.2 RWCF working copy
- 9.2.3 RWPD log book

ASL COC Form

