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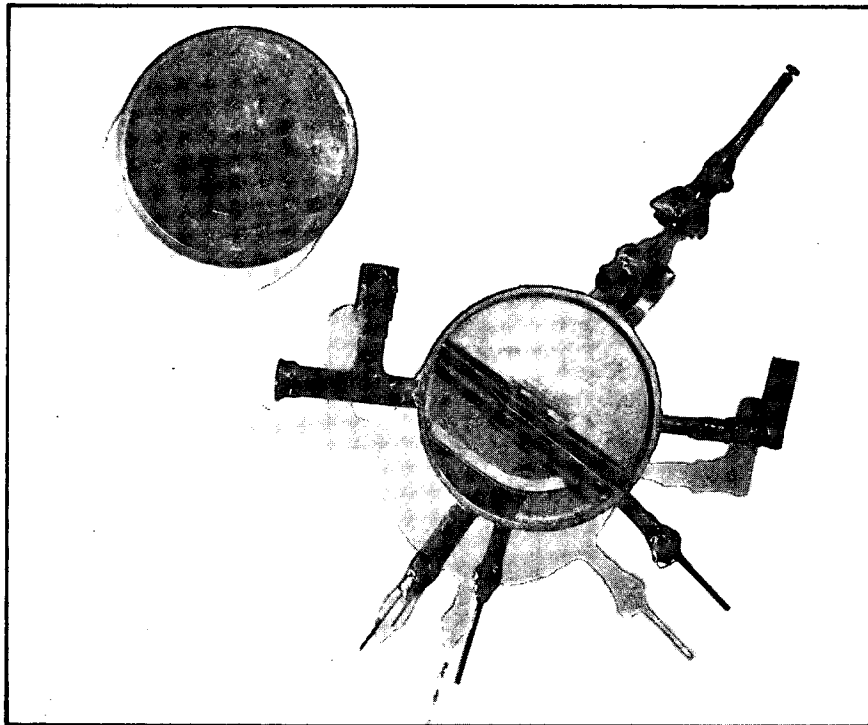
UNIVERSITY OF CALIFORNIA

ENVIRONMENT, HEALTH AND SAFETY DIVISION

DRAFT

Guidelines for Satellite Accumulation Areas (SAAs)

July 1991



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DRAFT

**Guidelines for Satellite
Accumulation Areas (SAAs)**

**Revision 0
July 1991**

**Environment, Health and Safety Division
Lawrence Berkeley Laboratory
University of California
Berkeley, CA 94720**

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Guidelines for Satellite Accumulation Areas (SAAs) at LBL

Section 1: Introduction

1.1 Purpose

The purpose of this document is to set conditions for establishing and maintaining areas for the accumulation of hazardous waste at LBL. Areas designed for accumulation of these wastes in quantities smaller than 100 kg (220 lb) per month of solid waste or 55 gallons per month of liquid waste are called Satellite Accumulation Areas (SAAs). Areas designed for accumulation of wastes in greater amounts are called Waste Accumulation Areas (WAAs). This document provides guidelines for establishing and maintaining an SAA.

1.2 Background

Hazardous waste, by definition, can cause serious injury to human health and the environment. Everyone connected with a WAA or SAA must exercise great care to ensure that hazardous wastes are handled safely and correctly at all times.

A casual attitude toward environmental pollution is no longer socially or legally acceptable. Environmental regulators have been using criminal prosecutions against polluters, and the courts are subjecting convicted polluters to heavy fines and even prison terms. Thus, it is vitally important that everyone concerned with hazardous waste understand his/her responsibilities with regard to that waste.

Because of their potential danger to humans and to the environment, WAAs and SAAs must provide storage areas that are secure and that will safely contain any wastes that are spilled or otherwise accidentally released.

Section 2: Governing Documents and References

2.1 Governing Documents

1. Title 22, California Code of Regulations, Chapter 30, Articles 9 and 11.
2. Environmental Protection Agency, Title 40, Code of Federal Regulations, Parts 260-265.
3. LBL Master Emergency Plan, Pub-237 revised.

2.2 References

1. *Guidelines for Generators of Hazardous Waste at LBL*, PUB-3092
2. *Occurrence Reporting*, LBID-1694
3. *Aldrich Catalog of Fine Chemicals*
4. *NIOSH Registry of Toxic Effects of Chemical Substances*
5. *The Merck Index: An Encyclopedia of Chemicals, Drugs, and Biologicals*

Section 3: Definitions

Waste Accumulation Area (WAA): An officially designated and secured area where large quantities (greater than 100 kg [220 lb] per month of dry hazardous wastes, more than 1 kg [2.2 lb] of dry extremely hazardous wastes, or more than 55 gallons of liquid hazardous waste) are collected and stored until they can be picked up for disposal. Waste must be stored in LBL WAAs for no more than 60 days. The Hazardous Waste Handling Facility at LBL is a WAA.

Satellite Accumulation Area (SAA): An area in an individual laboratory, shop, or other facility officially set aside for the accumulation of waste not to exceed 100 kg/month (220 lb/month) of dry hazardous waste, one kg/month (2.2 lb/month) of dry extremely hazardous waste, or 55 gallons of liquid hazardous waste. Waste can be accumulated in LBL SAAs for up to 275 days. Because of the need for separation of waste into specific categories, a different site must be established for each class of waste stream for each facility/laboratory. For example, a given laboratory could have one SAA for solvents and another for hazardous chemicals.

Hazardous Wastes: Hazardous wastes are

- wastes listed in the California Code of Regulations (22 CCR 66680) and the Code of Federal Regulations (40 CFR Part 261)
- wastes that exhibit one or more of the criteria for identification of "hazardous waste" (22 CCR 66693–66723). These criteria are
 - toxicity
 - persistent and bioaccumulative effect
 - ignitibility
 - reactivity
 - corrosivity
- radioactive mixed wastes (materials that contain both hazardous chemical and radioactive wastes)
- wastewater that exceeds sanitary-sewer discharge limits.

Extremely hazardous substance: any of 406 chemicals identified by EPA on the basis of toxicity and listed under SARA Title III.

Ignitable wastes: liquids with a flash point of less than 140°F, solids that ignite spontaneously through absorption of moisture or through friction and burn vigorously, flammable gases, and oxidizers.

Workplace Start Date (SAAs only): the date that waste is first placed in a container.

Workplace End Date (SAAs only): the date a container is sealed for transfer to a WAA or the HWHF. No waste can be added to a container after it is sealed.

WAA Receival or Accumulation Start Date (SAAs only): The date that a container transferred from an SAA to the HWHF or a WAA is received by the manager of the unit receiving the container. This date can be no more than three days after the Workplace end date for the same container.

Waste Container: For the purposes of WAAs and SAAs, a waste container is anything that collects waste in the quantities covered. Waste containers include drums, carboys, cans, sludge collection traps, and underground storage tanks.

Collection Container (SAAs): A large grey molded plastic tub designed to hold small bottles of chemicals and materials.

Secondary Containment: A container designed to hold one or more containers for the collection of liquid waste in a laboratory or shop area. Examples of secondary containment include plastic tubs or buckets and photographic development trays.

Waste Generator: A waste generator is the individual or operation responsible for actually generating the hazardous waste within an organization. LBL as a whole is viewed as a waste generator by environmental regulatory agencies. Within LBL, each researcher, laboratory, shop, and facility, as a potential point of origin for hazardous waste, is a waste generator.

Waste-Generating Organization: the program, facility, or group that generates the waste.

Waste Stream: Waste generated from an industrial process or application, laboratory experiment, or routine laboratory procedure, with roughly constant and unchanging hazardous and/or radioactivity characteristics.

Cradle-to-Grave Tracking: The system whereby carefully detailed records are maintained documenting the generation, storage, treatment, and disposal of all hazardous waste generated at a facility. These records essentially cover

hazardous waste from the point of origin (generation) to its final offsite destination and disposal.

Controlled Area (for radiation protection): an area where radioactive materials or elevated radiation fields may be present.

Segregate in this document means "do not mix" chemically unrelated or incompatible materials in the same container; each SAA container must contain waste of only one hazard category.

Separate means "set apart physically" in this document.

Section 4: Responsibilities

The *Facility/Laboratory Supervisor (or designee)* is responsible for enforcing proper waste accumulation requirements at the SAA and maintaining records needed to demonstrate that the SAA has not exceeded its allowed volume limits.

The *Waste Generator* is responsible for maintenance of the SAA and for keeping detailed records of waste accumulation.

Section 5: Guidelines and Rules Specific to SAAs

5.1 Constructing an SAA

- **The area must be marked clearly as an SAA.**
- The area must be at or near the site where the waste is generated so that the SAA can be observed by staff while working. The intent of this requirement is to provide virtually full-time monitoring of the SAA by the individual(s) generating the waste.
- Applicable procedures and directions, including these guidelines, must be readily accessible at the site. This information can be kept in the Laboratory/Facility Notebook.
- Secondary containment is required for liquid wastes. The secondary containment must be compatible with the chemicals stored in it. Examples of secondary containment in SAAs include water troughs, photographic-chemical trays, or LBL tote boxes lined with plastic. Glass containers must always be in some form of plastic secondary containment.

- Containers for the accumulation of flammable materials (e.g., solvents, solvent-contaminated rags) must be metal, with closures sufficiently tight to restrict the supply of oxygen. See Section 5.3, Containers in SAAs, for more details.

5.2 Segregation and Separation Requirements in SAAs

Because of the need to **segregate** waste into specific hazard categories, each facility/laboratory must establish a different container for each waste stream. Wastes in the same hazard class (for example, halogenated solvents) can be combined with each other in a single waste container.

Segregation is important for three reasons: **safety, disposability, and recyclability.**

Safety. When chemicals are mixed without regard to their compatibility, safety hazards can result: for example, the resulting mixture could explode or produce toxic gases. A safe rule for mixing chemicals is **When in doubt, DON'T MIX.** Call the EH&S Environmental Specialist, x 4644, for help.

Disposal requirements. Certain chemicals can be disposed relatively cheaply. But that same chemical, if contaminated with certain other chemicals, becomes very expensive or difficult to dispose. The classic example is any hazardous chemical contaminated with radioactive wastes, no matter how low the radioactivity level. Radioactive mixed wastes, as these types of wastes are called, are not currently disposable anywhere.

Recyclability. As with disposability, certain chemicals can be recycled at great savings to LBL, but small amounts of other chemicals mixed into these chemicals render the original chemical unrecyclable. For example, waste oil is recyclable, but a few tablespoons of halogenated solvent in a 55-gallon barrel of waste oil will render that barrel of oil unrecyclable.

Separate your chemicals into the classes designated on the Hazardous Waste Disposal Requisition (Appendix A). Separation of chemicals in your SAA is important to avoid cross-contamination of incompatible chemicals in the event of spills.

Radioactive wastes must be separated into their own SAA. They must be clearly labeled and set apart physically from SAAs for nonradioactive wastes, in order to eliminate any possibility of mixing radioactive and other hazardous wastes.

5.3 Containers in SAAs

Use the following waste and collection containers in your SAA.

Waste Stream	Approved Container	Stores number
Lab-pack-quantity chemicals	Plastic tote box	8115-66258
Liquid wastes, bulk, nonflammable	5-gallon plastic or glass carboy, depending on chemical to be contained (one carboy for each hazard category)	8125-45694 (plastic) 8125-27825 (glass)
Liquid wastes, bulk, flammable	Red metal 5-gallon flam can	7960-30344

5.4 Labeling Requirements in SAAs

Each collection container and waste container in an SAA must have an affixed Hazardous Waste label (see Figure 1) with the Generator (including building), Phone number, Workplace start date, Contents, Hazardous properties, and Waste form sections completed. Other labels (Carcinogenic, Flammable, PCBs, etc.) must also be affixed to containers as appropriate. For bottles of waste in collection containers, each bottle need not be labeled as hazardous waste, but the chemicals must be segregated by hazard category into containers, with each container labeled with a properly filled-out Hazardous Waste label.

Each collection container and waste container must have a Record of Waste Accumulation form (Figure 2) attached. Each time you place waste in a container, enter onto this form the date, your initials, and the type and amount of waste being added. For waste organic solvents only, use the Waste Organic Solvents tag shown in Figure 3, available from HWHF staff, x 7625.

HAZARDOUS WASTE	
HANDLE WITH CARE!	
Generator _____	Phone # _____
Contents _____ _____ _____	Hazardous properties <i>Check all that apply</i> <input type="checkbox"/> Toxic <input type="checkbox"/> Corrosive <input type="checkbox"/> Ignitable <input type="checkbox"/> Reactive <input type="checkbox"/> Other _____
Workplace start date _____ Workplace end date _____ WAA receipt or accumulation start date* _____ HWH receipt date _____	
Sample analysis # _____	Waste form <input type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Gas
Disposal requisition # _____	
<small>*Receipt Date from Workplace or Accumulation Start Date in the WAA</small> Lawrence Berkeley Laboratory #1 Cyclotron Rd., Berkeley, CA 94720	

- ① **Generator:** Enter name and building of person generating the waste.
- ② **Contents:** Give chemical name, material name, or waste stream description. Describe composition of waste.
- ③ **Workplace start date:** Enter date waste is first placed in container.
Workplace end date: Fill in current date when container is sealed.
- ④ **WAA receipt or accumulation start date:** Leave blank for SAAs.
- ⑤ **Phone Number:** Enter generator's LBL phone number.
- ⑥ **Hazardous properties:** Check appropriate boxes.
- ⑦ **Waste form:** Check appropriate box.

Figure 1. LBL Hazardous Waste label



**LAWRENCE BERKELEY LABORATORY
RECORD OF WASTE ACCUMULATION**

DATE ADDED	DESCRIPTION OF WHAT WAS ADDED	AMOUNT	INITIALS
6/7/91	Ethyl Acetate	500 ML	SBS
6/7	Methanol	.5 L	WC
6/8	Hexane	1.0 L	RAJ
6/10	Acetone	1.0 L	WC
6/15	Acetone	.2 L	SBS
6/15	Ethyl Acetate	.1 L	KMN
6/16	Acetone 6/16 RAJ	100 ML	RAJ
6/20	Methanol	.2 L	WC
6/21	Acetone	2.0 L	WC
6/23	Ethyl Acetate	2.0 L	WC
6/23	Hexane	1.2 L	KMN
7/1	Acetone	.5 L	SBS
7/1	Acetone	1000 ML	WC
7/2	Ethyl Acetate	1.0 L	SBS
7/2	Acetone	3.0 L	RAJ
7/3	Acetone Methanol KMN 7/5	0.2 L	KMN

(HWHF 4/29/91 RC/RM)

Figure 2. LBL Record of Waste Accumulation form

WASTE ORGANIC SOLVENTS ONLY

Bldg. 99 Room 201

Please list chemicals and amounts (print)

CHEMICAL	AMOUNT
Ethyl Acetate	3.6 L
Methanol	0.9 L
Hexane	2.2 L
Acetone	6.7 + 1 L
Ethyl Ether	0.5 L

Instructions on reverse side †

RL-6523 GPO 690-765

INSTRUCTIONS

- Do not dispose of extremely toxic organic chemicals in this container (example mercaptan compounds).
- List persons using this container (please print):
 - Smith
 - Jones
 - Chu
 - Nesbitt
- Refer questions on chemical waste disposal to EH&S, Waste Disposal, extension 6146.

Figure 3. Waste Organic Solvents tag (front and back)

Please note that the dating requirements on the Hazardous Waste label differ for WAAs and SAAs. The following short table summarizes the dating requirements on the Hazardous Waste label for SAAs.

Term	SAA Definition	SAA Usage
Workplace start date	Date when waste is first added to container	Fill in current date when waste is first added to container.
Workplace end date	Date container is sealed for transfer to a WAA or the HWHF	Fill in current date when container is sealed.
WAA receipt or accumulation start date	Date container received by HWHF or WAA	Leave blank. HWHF staff or WAA organizational manager will fill in correct date.

A full container must be removed from the SAA within three days of being filled and/or sealed (that is, within three days of the Workplace end date).

5.5 SAA Procedures

- Prepare and label containers as required. Be sure to adhere to the requirements for segregation, separation, and secondary containment.
- Collect waste according to the designated hazard classes.
- Close the containers after adding waste. Primary waste containers must be covered at all times.
- Add waste carefully to avoid spills. Even small amounts of liquid dripping down the side of a container will have to be cleaned up and treated as hazardous waste. Adding waste carefully to containers also helps minimize accidents and/or contamination of the surrounding area.
- When a container is either full or approaching the time limit (275 days), fax the Hazardous Waste Disposal Requisition (Appendix A) for the container and other necessary supporting documentation (Waste Profile Worksheet, Laboratory Waste Analysis Request Form, Record of

Waste Accumulation form) for that container to the HWHF, ext. 4838. Since a full container must be removed from the SAA within three days of being filled and/or sealed, please allow sufficient time for processing the Hazardous Waste Disposal Requisition.

- Labels must be complete and correct at all times. A container will not be picked up unless the Hazardous Waste label is filled in completely and correctly.



Approved By: *Neil C. Bully* Date: 7/17/91
Manager
Hazardous Waste Handling Facility
Hazardous Waste Management Department
Environment, Health and Safety Division

Approved By: *David McGraw* Date: 7/17/91
David McGraw
Division Director
Environment, Health and Safety Division

Approved By: *Leroy T. Kerth* Date: 7/17/91
Leroy T. Kerth
Associate Laboratory Director
Scientific and Technical Resources

Lawrence Berkeley Laboratory Revised 7/2/91
Hazardous Waste Disposal Requisition
FAX 4838 • Questions: HWHF 6146

EH&S USE ONLY

HWHF Requisition No. _____

GENERATOR INFORMATION			
Operating Account No. _____	Payroll Account _____	Has this information been FAXED before?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Name (printed) _____		Department _____	
Project _____			
Phone _____	Date _____	Material Location (Bldg., Rm., etc.) _____	

INSTRUCTIONS: Please provide all information requested. List no more than one container per line (use additional lines to describe container contents, if needed). Use separate packing list[s] for each box of containerized material. Your signature is required and certifies that to the best of your knowledge, the chemical composition provided for each item is correct. Complete all entries or your request will be returned for clarification.

		Number of Containers	Chemical Compatibility Code (See reverse)	Size of Container	Liquid, Solid or Gas	Supporting Document Code / Profile Number	% generated from DOE-funded activities
1	1						
2	2						
3	3						
4	4						
5	5						

*CODE: 1 2 3a 3b 4 5
 SUPPORTING DOCUMENTATION: Process knowledge MSDS Waste Profile ID Number Waste Profile Worksheet Laboratory Analysis Report Radioactive Tag

Based upon my knowledge of the waste, and/or chemical/physical analysis, I certify that the information provided regarding the waste specified on this form is correct. I understand that this information will be made available to regulatory agencies and that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

 Signature

EH&S USE ONLY

 HWHF Representative(s)

 Date

Appendix A

LBL HAZARDOUS WASTE DISPOSAL PACKAGING REQUIREMENTS

The following requirements must be met as a condition for pick-up and disposal of chemicals by Environment, Health and Safety (EH&S). If you have questions or unusual problems, please call EH&S at extension 5251 for assistance.

1. It is Laboratory policy not to flush any hazardous substances down the LBL sewer system. EH&S must review and approve the disposal of all hazardous substances to the sanitary sewer for compliance, as well as for safety issues. Washing contaminated glassware is an example. Highly toxic, malodorous, or lachrymatory chemicals should not be disposed of down the drain. Laboratory drains are generally interconnected; a substance that goes down one sink may well come up as a vapor in another. There is a very real hazard of chemicals from two sources contacting one another; the sulfide poured into one drain may contact the acid poured into another, with unpleasant consequences for all in the building. Some simple reactions can even cause explosions (e.g., ammonia plus iodine, silver nitrate plus ethanol, or picric acid plus lead salts).
2. Chemicals must be separated into compatible groups. A compatibility guide is provided below and a more detailed version is attached for reference.
3. Leaking containers of any sort will not be accepted.
4. Dry materials (gloves, wipes, pipettes, etc.) must be securely contained in double plastic bags and overpacked in a cardboard box. Packages that are wet or have sharp protruding objects will not be accepted.
5. Unknown chemicals cannot be accepted by the Hazardous Waste Handling Facility (HWHF). The responsible department must make every effort to identify the material designated for disposal. If all the user's attempts to identify the waste chemicals have failed, EH&S will aid in the sampling of said waste and will charge the user's account for analysis. For more information call the HWHF Manager at extension 6146.
6. Each breakable container must be properly boxed. Place all bottles in plastic bags. Then place the bags in a sturdy container and use an absorbent cushioning material that is compatible with the chemicals.
7. Each primary container must be labeled with content, amount, physical state, and the percentage breakdown when dealing with a mixture.
8. Each container must have a complete list of contents or description written on an official LBL Hazardous Waste Disposal Requisition form. Blank forms are available from your division office.
9. Containers must be of a reasonable size and weight so that one person is able to handle them safely. Containers that exceed 45 pounds or 18 inches on a side cannot be safely handled by one person and will not be accepted. Arrangements must be made with HWHF for transportation of large items.
10. Avoid accumulating laboratory chemicals! Request frequent chemical pick-up.
11. Do not accumulate any wastes for over 60 days at a Waste Accumulation Area (WAA) or over 275 days at a Satellite Accumulation Area (SAA).

SUPPORTING DOCUMENTATION REQUIREMENTS

Each waste container must have the contents described on the hazardous waste label, and supporting documentation must be attached to the container in a plastic pouch OR on file at HWHF. Supporting documentation can be one of the following:

- (A) Process knowledge of wastes whose composition is documented by the procedures generating them; (B) records of accumulation - a log that contains an entry each time waste is added to a container; (C) an MSDS for all chemicals/materials used in an experiment or process; (D) an MSDS for spent or unused materials; (E) a generic description when the material has a well-known standard composition (e.g., waste batteries or waste mercury-contaminated glassware); (F) analytic results from a certified laboratory, or (G) radioactive tag.

Waste Profiling. If the paperwork submitted supports the description of the waste stream adequately, and the waste stream will not change over time, HWHF will assign a waste stream profile number. If not, HWHF will contact the generator for clarification and/or to arrange for laboratory analysis of the waste stream. Once a profile number is assigned, the generator enters it under the supporting document code/profile number column on the requisition form.

PICKUP AND TRANSPORTATION

An LBL Hazardous Waste Disposal Requisition form must be "FAXed" to HWHF. Extension 4838 is dedicated to this purpose.

Keep two copies of the requisition form; attach one copy to the containers to be picked up and put the other in your file or work binder as a generator record.

CHEMICAL COMPATIBILITY GUIDE

Separating chemicals into compatible groups can be a complicated procedure. There are several in-depth guides available. For the purposes of packaging chemicals for removal from the Laboratory, EH&S provides the following simplified guide on the following page. Additional information on proper segregation of chemicals can be found in references such as the Material Safety Data Sheets (MSDSs), Aldrich Catalog Handbook of Fine Chemicals, the NIOSH Registry of Toxic Effects of Chemical Substances, or the Merck Index. Laboratory personnel will be able to segregate most chemicals into safe, compatible groups for shipping or short-term storage. For potentially explosive chemicals, contact Industrial Hygiene at extension 5829 for assistance. Contact HWHF for questions about separation and segregation of waste.

CHEMICAL COMPATIBILITY CODES

I. Solvents - Flammable Liquids, Combustible Liquids	V. Poisons - Organics, Metallics, Inorganic Cyanides
II. Flammable Solids - Organic, Metals, Solids that are dangerous when wet, Sulfides, Phosphorous Allotropes, Organometallic Compounds, Inorganics	VI. Potential Reactives (Explosive) - Trinitrôes, Azides, Amides, Monomeric Isocyanates
III. Oxidizers - Nitrates, Chlorates, Perchlorates, Oxides, Oxidizing Acids	VII. Other Chemical Waste - Separate organics from inorganics. Separate liquids from solids.
IV. Corrosives - Acids (Mineral, Organic, Reactive Corrosives); Bases (Inorganics, Organics, Hydrazine Solutions)	VIII. Debris - Separate organics from inorganics and label packaging with all contaminants present.

Appendix A

Chemical Compatibility Guide

Identifying and recognizing the hazards of each chemical is critical in order to handle these materials safely.

To meet safety and environmental requirements, the following **basic categories** must be used for segregating and separating your waste.

I. Solvents

- A. Flammable Liquids
 - 1. Aliphatic:
Acetone, Isopropanol, Methyl Ethyl Ketone, Methanol
 - 2. Aromatic:
Toluene, Xylene, Benzene, Propyl Benzene
 - 3. Monohalogenated Solvents:
Chlorobenzene, Ethyl Chloride, Acetyl Chloride
 - 4. Monomers:
Styrene, Ethylene, Vinyl Acetylene, Vinyl Pyridine
 - 5. Reactives:
Isopropyl Ether, Phenyl Manganese Chloride, Hydrazine Anhydrous, Ethyl Ether, Divinyl Ether
- B. Combustible Liquids
 - 1. Glycols:
Ethylene Glycol Dibutyl Ether, Ethylene Glycol Monomethyl Ether
 - 2. Mineral Spirits
- C. Halogenated Solvents
Carbon Tetrachloride, 1,1,1-Trichloroethane Ethyl Chloroacetate

II. Flammable Solids

- A. Organic Flammable Solids:
Cellulose Acetate, Nitrocellulose (At least 20% wet)
- B. Flammable Metals:
Manganese, Magnesium, Yttrium, Zirconium
- C. Flammable Solids (Dangerous when wet):
Sodium, Lithium, Calcium, Lithium Hydride
- D. Flammable Sulfides:
Sodium Sulfide, Potassium Sulfide, Ammonium Sulfide
- E. Phosphorous Allotropes:
Phosphorus (Yellow, Red, White), Aluminum Phosphide, Phosphorus Sulfide, Phosphorus Pentasulfide
- F. Organometallic Compounds:
Lithium Butoxide, Lithium Metoxide, Sodium Ethoxy, Sodium Butylate, Potassium Methylate
- G. Inorganic Flammable Solids:
Sodium Phosphide, Aluminum Hydride, Sodium Borohydride, Boron Lithium Aluminum Alloy

III. Oxidizers

- A. Nitrates:
Potassium Nitrate, Calcium Nitrate, Sodium Nitrate, Zinc Nitrate, Thallium Nitrate
- B. Chlorates:
Potassium Chlorate, Lithium Chlorate, Calcium Chlorate, Strontium Chlorate
- C. Perchlorates:
Lithium Perchlorate, Magnesium Perchlorate
- D. Oxides:
Manganese Dioxide, Magnesium Dioxide, Chromium Trioxide, Lead Oxide (Brown)
- E. Oxidizing Acids:
Nitric Acid (greater than 40%), Perchloric Acid, Periodic Acid

Appendix A

Chemical Compatibility Guide continued...

IV. Corrosives

A. Acids

1. Mineral Acids:
Hydrochloric Acid, Sulfuric Acid, Nitric Acid (Less than 40%), Phosphoric Acid
2. Organic Acids:
Acetic Acid, Acetic Anhydride, Acetyl Bromide, Formic Acid, Isopentanoic Acid
3. Reactive Corrosives:
Phosphorus Trichloride, Phosphorus Pentachloride, Antimony Trichloride, Phosphoric Anhydride

B. Bases

1. Inorganics:
Sodium hydroxide, Potassium Hydroxide, Ammonium Hydroxide, Sodium Hypochlorite
2. Organics:
Amino Propyl Diethanolamine, Amino Ethyl Piperazine, Acetyl Iodide, Benzoyl Chloride, Dimethyl Sulfonyl Chloride
3. Hydrazine Solutions

V. Poisons

A. Organics:

Phenol, Acrylamide, Benzoin, Benzidine, Aniline

B. Metallics:

Arsenic, Lead, Beryllium, Mercury, Selenium

C. Inorganic Cyanides:

Potassium Cyanide, Sodium Cyanide, Cyanogen Bromide

VI. Potential Reactives (Explosive)

A. Trinitros:

Trinitrophenol (Picric Acid), Trinitrobenzene, Trinitrotoluene (TNT), Trinitromethane

B. Azides:

Hydrogen Azide, Ammonium Azide, Barium Azide, Chlorine Azide, Silver Azide

C. Amides:

Trinitroaniline (Picramide), Sodamide, Potassium Amide

D. Monomeric Isocyanates:

Hydrocyanic Acid, Isothiocyanuric Acid

VII. Other Chemical Waste

A. Separate Organics from Inorganics*

B. Separate Liquids from Solids

VIII. Debris

A. Separate Organics from Inorganics* and label packaging with all contaminants present.

*Inorganic materials contaminated with organic components should be segregated as organic.

Appendix B: Who to Call for Further Information

<u>Number</u>	<u>Item</u>	<u>Person</u>
5251	EH&S general number	
5829	Industrial Hygiene Department general number	
4644	Environmental Specialist	Rita Cummings
7625	HWHF Technician	Reggie Martinez
6146	HWHF Manager	Charlie Carr
7623	Environmental Monitoring	Gary Schleimer
4644	Help in locating WAAs	Rita Cummings
7625	Help in locating WAAs	Reggie Martinez
6146	Help in locating WAAs	Charlie Carr
7625	Absorbant for spill cleanup	Reggie Martinez
6242	Chemicals, solvents, surplus	Materiel Management
4644	Compatibility, chemical (what can be stored next to what and where)	Rita Cummings
7625	Compatibility, chemical (what can be stored next to what and where)	Reggie Martinez
6146	Containers for hazardous waste (what type to use)	Charlie Carr
4838	Fax number, hazardous waste disposal	
4776	Fax number, EH&S	
6015	Grounding and bonding wires	Fire Department
6146	WAA Daily Inspection Checklist	Charlie Carr
6146	WAAs, establishing or deactivating	Charlie Carr
6146	WAA site record-keeping requirements	Charlie Carr
6146	WAA site guidelines for maintenance	Charlie Carr
5829	Hazardous material, information prior to ordering	Industrial Hygiene Department
6146	Hazardous waste not picked up in 3 days	Charlie Carr
5303	Lead, scrap, not contaminated	Salvage
6146	Labeling "empty" hazardous waste containers	Charlie Carr
7625	Labeling "empty" hazardous waste containers	Reggie Martinez
6146	Labeling hazardous waste containers	Charlie Carr
7625	Labeling hazardous waste containers	Reggie Martinez
7615	Liquid destined for EBMUD sewer	Charles Smith

<u>Number</u>	<u>Item</u>	<u>Person</u>
5829	MSDSs, copies of	Industrial Hygiene Department
4644	MSDSs, interpretation of	Rita Cummings
7609	Mercury, spill	Glenn Garabedian
7625	Mercury, spill	Reggie Martinez
5303	Metal, precious, recycling of	Salvage
5303	Metal, scrap, for recycling	Salvage
4644	Minimizing hazardous waste in your area	Rita Cummings
4644	Mixing waste (what's safe to mix?)	Rita Cummings
7625	PCBs, disposal of	Reggie Martinez
5829	PPE (Personal Protective Equipment)	Industrial Hygiene
7603	Radioisotope safety	Jim Haley
7621	Radioisotope transportation	Dick Harvey
4644	Regulations, hazardous waste, clarification of	Rita Cummings
4644	Regulations, hazardous waste, copies of	Rita Cummings
7625	Spill cleanup supplies	Reggie Martinez
5251	Training, to sign up for	EH&S front desk
5258	Training, hazardous waste, course content	Jack Bartley
4644	Training, medical and biological waste, course content	Rita Cummings
6266	Chemical exposure (skin, hair, eyes, swallowed, inhalation)	Medical Services (normal working hours)
7911	Chemical exposure (skin, hair, eyes, swallowed, inhalation)	Fire Department (off hours)
7911	Hazardous Material Spills	
1-800-523-2222	Poison Control Hotline for help with chemical exposures	
1-415-476-6600	Poison Control Hotline for help with chemical exposures	

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