Campus
Hazardous Waste Disposal Procedures

Batteries (Non-automotive):	Each department or building should have a collection container for batteries. When it is **near** full; call EH&S 2252 or 2338 for pickup.
Hazardous Chemical Waste:	All hazardous chemical waste must be in a sturdy container with a tight-fitting screw-on lid. The container must be labeled as to the contents and the hazard. Call EH&S at 2252 or 2338 to arrange for pick up. **Under no circumstances will chemical waste be dropped off at the Hazardous Waste Storage Area without contacting EH&S.**
Laboratory Waste:	Waste should be taken **into** the building Hazardous Waste Storage Area and logged in. **Under no circumstances should waste be left outside the door of the Hazardous Waste Area.**
Computer Monitor/TV:	Arrange pick-up with Surplus and Asset Management at 2157.

PACKAGING CHEMICAL WASTES

- Place hazardous waste in sealable containers. Waste disposal cost is based on volume, not weight, therefore, whenever possible, containers should be filled, leaving headspace for expansion of the contents. Often the original container is perfectly acceptable.

- If you routinely generate significant quantities of compatible solvents or other liquids, bulking of waste in five gallon carboys may be practical. Savings to the University from this practice are substantial. If you are interested, please call EH&S at 2252 or 2338.

- The container should not react with the waste being stored (e.g. no hydrofluoric acid in glass). Similar wastes may be mixed if they are compatible (e.g. non-halogenated solvents).

- Whenever possible, *wastes from incompatible hazard classes should not be mixed* (e.g. organic solvents with oxidizers). Certain metals also cause disposal problems when mixed with flammable liquids or other organic liquids.

- Containers must be **kept closed** except during actual transfers. **Do not leave a hazardous waste container with a funnel in it.** See **CHEMICAL WASTE STORAGE** below for more information.

- Chemical containers that have been triple-rinsed and air-dried in a ventilated area can be placed in the trash or recycled. If the original contents were highly toxic, the container should be rinsed first with an appropriate solvent and the washings disposed of as hazardous

waste. See **DISPOSAL OF EMPTY GLASS CHEMICAL CONTAINERS** below for more information.

CHEMICAL WASTE STORAGE

Hazardous waste containers are stored in satellite accumulation areas (SAA). SAA's are used to manage waste in laboratories and shops because it provides safe and effective means to accumulate hazardous waste before removal by EH&S personnel. Additionally, SAA's provide the least restrictive regulatory option for the accumulation and storage of hazardous waste containers.

Satellite Accumulation Area Storage Guidelines:

- All waste must be stored in containers.
- Containers must be in good condition and compatible with the waste they contain.
- Containers must be kept closed at all times except when adding or removing waste.
- Containers must be labeled or clearly marked with words that describe the contents of the waste (i.e., Acetone 50%, Water 50%) and the words "Hazardous Waste."
- Containers must be stored at or near the point of generation and under the control of the generator of the waste.
- The waste storage volume should never exceed 55-gallons.
- Containers should be segregated appropriately during storage.
- All spills and leaks should be cleaned up immediately. If lab or area personnel are unable to clean up the spill they should contact EH&S at 2252 or 2338 or call 911 if the spill is an emergency.

LABELING OF CHEMICAL WASTE CONTAINERS

- Containers containing hazardous waste must be labeled with the words ***HAZARDOUS WASTE*** along with the names of the principal chemical constituents and the approximate percentage.
- Waste container labels (see below) can be obtained by contacting Environmental Health & Safety at 2252 or 2338. Use of these labels is preferred but not mandatory unless the waste will be placed in storage before disposal. If you choose not to use the standard labels, the container still must be labeled with the words **HAZARDOUS WASTE**.
- Do not list reactants, only products. For example, if cyanide was used in a reaction but all of the material was oxidized to a cyanate before disposal; do not list cyanide on the label.
- Use IUPAC or full chemical names (in English), no abbreviations, symbols, structural diagrams or product trade names.

- Labeling should be accurate and legible and should include the name of the generator, the name of the lab group or PI, the department, and an extension where someone who is knowledgeable about that specific waste can be reached on the day of the pickup in case questions arise during packaging for disposal.

- Do not place the date on the label until the day the container is placed in the main collection room. **Date the container with the current date once it is removed from the lab for the waste pickup**.

Containers of hazardous waste may be stored in an area of a laboratory or facilities operation near the point of generation. This area must be controlled by the principal investigator or workers generating the waste. State and federal regulations stipulate how waste generators store chemical waste and require the following:

- Any container used to store hazardous waste must be labeled with the words "hazardous waste" (regardless of its location) as soon as accumulation begins.

- Be sure that the container is compatible with the chemical waste. Use containers that are made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored. For example, do not place hydrofluoric acid in glass. Often the original container is suitable.

- Waste containers must be closed at all times, except when being filled. Do not leave funnels in the containers.

- Be sure that containers in the waste storage area do not leak. Consider the use of secondary containment, such as a tray, larger container or basin. If a leaking container is found, immediately clean up any spilled material according to established spill cleanup procedures and transfer the waste into a container that is in good condition.

- Like any chemical storage in the laboratory or work area, be sure to segregate the containers according to the type of waste.

- Waste stored near drains (floor, sink, cup sink) should have secondary containment. If you have a sink or drain that is not in use, contact maintenance to explore possibilities for plugging or sealing the drain. Secondary containers must be compatible with the waste. Contact EH&S for more information.

DISPOSAL OF EMPTY CHEMICAL CONTAINERS

Chemical containers that have been emptied (generally this means drained of their contents by normal methods including pouring, pumping, aspirating, etc.) are not regulated as hazardous waste; however they should not necessarily be disposed of in the regular solid waste dumpsters. Generally, the primary container (the container that actually held the chemical, as opposed to a container that the primary chemical was packed in), must be triple rinsed with water or other suitable solvent and air-dried before disposal. For volatile organic solvents (e.g. acetone, ethanol, ethyl acetate, ethyl ether, hexane, methanol, methylene chloride, petroleum ether, toluene, xylene, etc.) not on the list of

acutely hazardous wastes, the emptied container can be air-dried in a ventilated area (e.g. a chemical fume hood) without triple rinsing.

The waste generator must determine whether the washings must be collected and disposed of as hazardous waste. Generally, if the chemical is on the list of acutely hazardous wastes or if the material is known to have high acute toxicity, the washings must be collected.

Glass Containers

Glass containers must be triple-rinsed with water or other suitable solvent and air-dried to ensure that it is free of liquid or other visible chemical residue. Intact containers (with caps removed) meeting these criteria should be placed in glass recycling receptacles. If a suitable glass recycling receptacle is not available, place the containers in a box marked "recyclable glass" and place the box in the hallway for removal by Building Services personnel.

If the glass container has visible residue and this residue is hazardous, the container should be disposed as waste. If the residue is not hazardous, the intact container should be placed in glass recycling containers.

Broken glass containers that are free of chemical residue should be placed in broken glass receptacles or placed in a puncture resistant container, such as a rigid plastic container or corrugated cardboard box. The plastic container or box should be sealed and placed in the hallway for collection by Building Services personnel.

Metal Containers

Metal containers must be triple-rinsed with water or other suitable solvent and air-dried. If the container is free of hazardous chemical residues, it may be placed outside in the hallway for collection by Building Services personnel. Otherwise, it should be disposed as hazardous waste.

Secondary Containers

Containers that were used as overpack for the primary chemical container may be placed in regular trash or recyclable trash. Any packing materials, such as vermiculite, perlite, clay, Styrofoam, etc., may be placed in the regular trash unless it was contaminated with the chemical as a result of container breakage or leak. Packing materials contaminated with hazardous materials should be disposed of as hazardous waste.

Secondary Containment

Secondary containment is used to prevent the spread of chemical spills, including spills involving chemical wastes. Spilled chemicals may present a hazard to those occupying the lab or work area and may result in a release to the environment.

Secondary containment is recommended for moving chemicals through buildings or, especially, outdoors. It is also recommended for most hazardous waste containers, especially those stored near sinks or drains.

There are a number of products available for this purpose including, but not limited to, the following:

- Trays for vacuum pumps or oil-containing equipment

- party buckets made of polypropylene for carboys, especially those stored on the floor

- Plastic tubs may be used inside fume hoods or near sinks

- Sinks may either be covered completely (if not in use) or partially (allowing for tubing drainage)