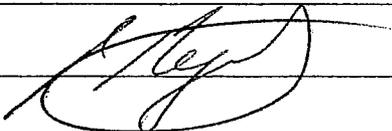


CARETAKING SERVICES (Standard Operating) PROCEDURE # A1

GENERAL CLEANING OF LABORATORIES

Date of Last revision:	January 26, 2006
Date of Draft:	November 16, 2005
Originating Department:	Caretaking Services
Affected Departments:	Physical Plant - Caretaking Services All Academic Departments using Controlled Products
Approved By:	

PURPOSE:

Due to the unique circumstances and potential hazards that may occur in laboratories, this document has been developed to provide information and instructions to caretaking staff on how to safely conduct their tasks when working in a laboratory.

POLICY:

As part of 'due diligence' (doing what is reasonably practicable) the safety and health of all Caretaking Services employees is a priority for the University of Manitoba and the Physical Plant Department. Therefore it is important that:

1. Physical Plant supervisors, together with laboratory supervisors and personnel should ensure that the areas are safe for the caretaking employees to carry out their work. Policies and procedures should be in place to ensure that caretakers are not put in a position where they have to make a decision as to whether the laboratory is safe to clean or not.
2. Caretakers who carry out work in laboratories should be fully aware of the potential hazards and capable of understanding and following oral and written information and instructions.
3. **Caretaking employees DO NOT remove hazardous waste from laboratories.**
4. **Caretaking employees DO NOT clean-up chemical, biological or radioactive spills or spills of unknown origin in laboratories.**
5. **Caretaking employees DO NOT clean laboratory benches.**
6. **Caretaking employees DO NOT clean Biological Containment Level 3 laboratories:** Routine cleaning of biological Containment Level 3 is to be undertaken only by qualified and authorized users (laboratory staff) of the facility.
7. **Caretaking employees DO NOT clean fume hoods or change the light bulbs in fume hoods.** Laboratory owners are responsible for cleaning and decommissioning fume hoods and Physical Plant electricians shall be contacted to change light bulbs in fume hoods.
8. **Undergraduate teaching labs and clinical areas are considered to have similar hazards to the research labs. Procedures and level of service should therefore be identical unless special hazards have been identified (see Responsibilities - Laboratory Supervisor #2-4.) and/or special arrangements are made between the caretaking manager and the lab owner.**

SCOPE:

There are three varieties of research laboratories within the University of Manitoba:

1. Chemical laboratories-

The hazards here are mainly:

1. the potential for exposure to harmful chemicals, which may cause harm by inhalation, ingestion, or contact, and
2. work near glassware and other sharps where there is the potential for breakage, cuts and punctures.

Note: Not all chemicals are harmful, but many are, with vastly different effects, such as simple irritation of the skin or lungs, to serious skin burns, or illnesses such as asthma. Specific information can be obtained by contacting the researcher or the departmental WHMIS representative who will have access to MSDSs and other hazard information.

2. Biological laboratories

The hazards are as in Chemical laboratories but with the addition of the potential for exposure to microorganisms, which in some cases could cause infection and illness.

Note: Microorganisms are more commonly referred to as germs or bugs. Many of them are quite harmless, but it is possible that in some cases if people come into close contact with these germs they may be infected and in some instances become ill.

*U of M Biological Safety Advisory Committee has designated that all research with biological material be done according to Health Canada's "Laboratory Biosafety Guidelines" These guidelines have classified organisms into **Risk Groups 1-4**, according to the relative personal and environmental hazard of the organisms. Additionally, the guidelines provide the end-users with a description of the minimum containment required for handling the organism safely in a laboratory setting (**Containment Levels 1-4**) and includes recommended engineering, operational, technical and physical requirements for manipulating the organism. There are no Containment Level 4 labs at the U of M and currently only one Level 3 lab. The level three lab is secured at all times and access is restricted. NO caretakers will access this area.*

A description of Risk Groups 1 and 2 and of Containment Levels 1 and 2 can be found in Appendix 1

3. Radiation laboratories

The hazards can include those in chemical and/or biological laboratories, with the addition that work with some form of radioactive material, or radiation emitting equipment, is undertaken within that laboratory. The Radiation Safety Program provides specific signage, standard operating procedures and training for caretakers entering labs where radioisotopes may be used. See References- Radiation Safety Manual.

This document provides guidance on the cleaning of all these types of laboratories.

RESPONSIBILITIES:

Everyone exercising his or her responsibilities as follows will achieve the successful application of this policy.

Caretaking Supervisors:

1. Shall establish proper communication lines with laboratory supervisors as their role is not just limited to whether the laboratories are being cleaned satisfactorily but also to give due regard to health and safety matters relevant to the caretaking staff. A recommended level of communication would be semi-annual (i.e. -2X per year) discussions.
2. Shall ensure appropriate orientation is provided to all caretaking staff on the procedures to follow while working in laboratories with a brief explanation of why it is important to follow the rules and procedures. Supervisors will discuss this with staff when they first start work in the laboratories and at regular intervals thereafter ('refreshers') or if the nature of the work changes.
3. Shall ensure all caretaking employees working in laboratories have attended WHMIS, Radiation Safety Awareness, and Lab Cleaning for Caretakers training session as provided by Physical Plant, and are aware of this document before beginning work in laboratories.

Caretaking Employees:

1. Shall follow the oral and written instructions provided by their supervisor and as outlined in the Procedure and Precautions sections below.
2. Shall report any accidents and incidents as outlined in the Precautions section below.
3. Shall wear Personal Protective Equipment (PPE) as instructed by their supervisor and outlined in the PPE and Procedures sections below.
4. Shall attend WHMIS, Radiation Safety Awareness, and Lab Cleaning for Caretakers training and be familiar with this document.

Laboratory Supervisors:

Laboratory supervisors have responsibilities for employees working on their premises and should monitor and review the arrangements in place with caretaking supervisors to ensure that these are working safely and effectively. Special attention should be given to ensure that:

1. Appropriate procedures are defined for hazardous waste disposal for their lab areas with reference to University of Manitoba guidelines.
2. Their laboratory personnel are trained in and follow these procedures. Some site-specific issues that may require special attention are identified in the Responsibilities section for Laboratory Personnel.
3. **Special/unique hazard areas and any other areas with other particular risk to caretakers are identified** e.g. *Biological Containment Level 2 laboratories, undergraduate teaching labs, clinical areas (e.g. Dentistry Clinics, University Health Services, JBRC Clinics) and special procedure rooms.*
4. When necessary, relevant additional information and instruction, which may vary depending on the specific nature of the work in the area, shall be provided to the caretakers and the caretaking supervisor. It may be necessary to develop special procedures/entrance requirements/PPE or in some cases it may be decided that it is more appropriate for laboratory staff to be in attendance while these labs are being cleaned in order to ensure an appropriate level of supervision and to provide assistance in the event of accidents etc.
5. If required, any immunization requirements for caretaking staff to work in their area are determined and communicated to the caretaking supervisor.

Laboratory Personnel

Laboratory personnel (supervisors, technicians, students, etc) have the responsibility to ensure that no hazardous items have been left in areas where there is the potential for caretakers to disturb them and compromise their health or safety with the following issues being of particular note:

1. Bottles of chemicals and/or chemical waste should never be stored on the floor but always stored in suitable chemical storage areas.
2. Appropriate sharps containers must be used and disposed of as directed by U of M Guidelines and Charts 1) Biohazardous Waste Disposal Guidelines, 2) Radioisotopes Disposal Chart, and 3) General Waste Disposal Chart for Laboratories. (all will be appended at end of this document). Particular concerns are:
 - When non-contaminated broken glass is disposed in plastic-bag-lined cardboard boxes, lab staff should ensure that the box is securely taped shut and clearly labeled "Broken Glass". Preferable disposal would be in special heavy duty commercially available "Broken Glass" disposal cartons.
 - Over-filled large sharps/broken glass bins stored on floors. The caretaker might move the bin during cleaning and when doing so there is a significant risk of sharps injury and contamination.
3. Any small, working amounts of chemicals, that may be within the open laboratory should be securely closed and labeled. Corrosive chemicals should never be left on the open bench. This is a sole responsibility of the laboratory workers.

PROCEDURES:

Caretaking Employees:

1. Basic Daily Activities for regular Laboratory cleaning:

- REMOVE REGULAR GARBAGE DISPOSED OF IN A WASTE CONTAINER WITH A BLACK LINER.
- SPOT CLEAN FLOORS
- SPOT CLEAN WALLS AND DOORS

2. Additional Activities:

- SWEEP, DUST MOP FLOORS..... TWICE WEEKLY
- WASH FLOORS..... WEEKLY
- RECYCLABLE PAPER COLLECTION AS PER ARRANGEMENT
- CLEANING OF WASTE CONTAINERS MONTHLY
- STRIP AND REFINISH FLOORS..... ANNUALLY
- CHANGE LIGHT BULBS AS REQUIRED
- DUST WINDOW SILLS* AS REQUIRED

** It is the responsibility of the lab owner to ensure that all hazardous and non-hazardous material are removed from the window sill and caretaker has safe access to the area.*

PRECAUTIONS:

It is well understood that laboratories will always use chemicals, and might use microorganisms. By using basic hygiene precautions and following rules, **caretakers** can be safe while carrying out their work in laboratories:

1. Safety first; extra caution must be taken when emptying waste containers in laboratories. **Do not put your hands into waste containers.** Although laboratory personnel should not be disposing of hazardous waste in the regular garbage, such items as syringes, glass or other sharp objects could sometimes accidentally be present and provide a potential risk or health hazard to the caretaking employee.
2. Use good basic personal hygiene;
 - o **Wash your hands regularly** and always when you have finished work or stop for a break.
 - o **Never put anything in your mouth while you are in the laboratory.** This includes pens, pencils, tools, cables, fingers etc.
 - o **Do not eat, drink, chew or apply cosmetics in the laboratory.**
 - o **Do not take food, drink, overcoats etc. into the laboratory.**
3. Do not touch anything while in the laboratory unless required to do so to carry out work and you have been told it is safe to do so by your supervisor. In particular do not touch anything on the benches and only move things on the floor if you have been told it is safe for you to do so. Do not place any items from the floor onto lab benches (chairs, waste containers, bottles, boxes, etc.)
4. **Never attempt to clean up a spill of unknown material**, no matter how harmless it may seem (e.g. many hazardous chemicals may look like water, but can damage your eyes skin or lungs). Always get advice from laboratory staff if there is a spill.
5. **Immediately report any accidents or incidents** to laboratory personnel or your supervisor. (including if anything is leaking or knocked over)
6. **Report to your supervisor immediately if you have an accident and injure yourself**, especially if you break the skin or get something in your eye or mouth.
7. If you have any doubts that it is safe to start or continue work, then you should not start until the matter is sorted out. Report your concern to your supervisor and wait for the instruction.

PERSONNEL PROTECTIVE EQUIPMENT (PPE)

1. Required personal protective equipment must be worn when required or instructed by your supervisor. (i.e. safety footwear, eyewear, etc.)
2. Always wear latex or rubber gloves provided by Caretaking Services during the cleaning and disinfecting procedures. Replace gloves every time when punctured or contaminated.

REFERENCES:

1. University of Manitoba "Controlled Product Standard, Part B-Guidelines for the Use, Storage and Handling of Controlled Products"
2. University of Manitoba "Biosafety Guidelines" and "Biohazardous Waste Disposal Guidelines".
3. University of Manitoba "Radiation Safety Manual"
4. University of Manitoba Hazardous Waste Disposal Program
5. University of Manitoba "Health and Safety Policy 512"

All available on The Environmental health and Safety Web site at http://umanitoba.ca/campus/health_and_safety/

REVIEW:

This Procedure shall be reviewed every three (3) years to determine its suitability. The next review is scheduled for January 2009.

POST:

This Procedure is to be posted on the safety board in every caretaking zone. Copies of this Procedure will be made available to every Caretaking Services employee working in laboratories at the University of Manitoba and circulated to departments with laboratories.

Cc. Environmental Health & Safety Office
Workplace Health and Safety Advisory Committee Co-chairs
File COR
Deans, Directors and Department Heads of relevant areas

Appendix 1

Risk Group 1 (low individual and community risk)

Any biological agent that is unlikely to cause disease in healthy workers or animals.

Containment Level 1 (CL1)

This applies to the basic laboratory that handles agents requiring containment level 1. CL1 requires no special design features beyond those suitable for a well-designed and functional laboratory. Biological safety cabinets (BSCs) are not required. Work may be done on an open bench top, and containment is achieved through the use of practices normally employed in a basic microbiology laboratory.

Risk Group 2 (moderate individual risk, low community risk)

Risk Group 2 organisms include any pathogen that can cause human disease but, under normal circumstances, is unlikely to be a serious hazard to laboratory workers, the community, livestock or the environment. Laboratory exposures rarely cause infection leading to serious disease; effective treatment and preventive measures are available, and the risk of spread is limited.

Containment Level 2 (CL2)

This applies to the laboratory that handles agents requiring containment level 2. The primary exposure hazards associated with organisms requiring CL2 are through the ingestion, inoculation and mucous membrane route. Agents requiring CL2 facilities are not generally transmitted by airborne routes, but care must be taken to avoid the generation of aerosols (aerosols can settle on bench tops and become an ingestion hazard through contamination of the hands⁽³⁾) or splashes. Primary containment devices such as BSCs and centrifuges with sealed rotors or safety cups are to be used as well as appropriate personal protective equipment (i.e., gloves, laboratory coats, protective eyewear). As well, environmental contamination must be minimized by the use of handwashing sinks and decontamination facilities (autoclaves).

Appendix 2

University of Manitoba

Biohazardous Waste Disposal Guidelines

This Waste chart is intended for reference for the disposal of Items contaminated ONLY with Biohazardous materials (see U of M "Biosafety Guide" for definition and details or consult EHSO 474-6633)

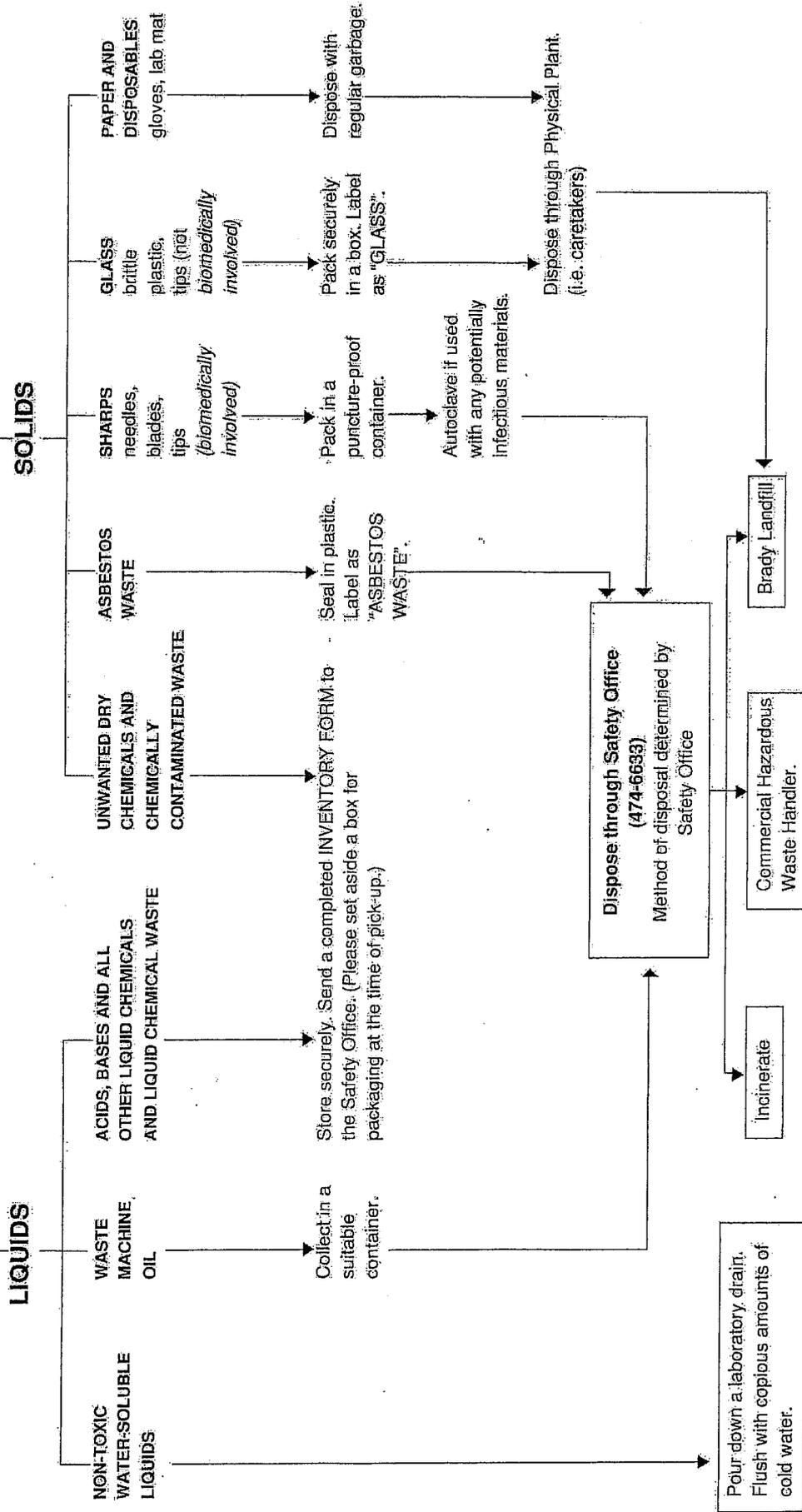
All Biohazardous Waste must be appropriately Decontaminated/Treated before disposal.
****MATERIAL WITH RADIOACTIVE OR CHEMICAL RESIDUES SHOULD NOT BE AUTOCLAVED****
 Contact the Environmental Health and Safety Office (474-6633) before generating mixed waste items
 i.e. contaminated with biological and radioactive or chemical residues.

Items To Be Disposed		Collection Method	Decontamination	Final Destination
Solids e.g. Petri Dishes, Plastic Culture flasks, bench paper, gloves	For Items with Biological Contamination <u>Only</u> .	Place in Plain Clear Autoclave Bags with Biohazard Logo Tape for Identification	Autoclave Minimum 1 Hr @ 121°C Add Autoclave Tape to bag as indication of decontamination status	-Remove Biohazard Logo Tape after autoclaving. -Place in Dark Garb Bags. -Dispose of with Caretakers.
	Radioactive contamination <u>Only</u>	Dispose of into a rigid, puncture resistant, container with a secure lid. Label the hazard appropriately.	none	-Give to EHSO Hazardous Waste Coordinator for disposal
	Chemical Contamination <u>Only</u>		none	
Biomedical Sharps e.g. All Needles, Syringes, Scalpel or Razor Blades,	Biological Contamination <u>Only</u> - Any Type	Dispose of into an Approved, Autoclavable Appropriately Labeled Sharps Container	-Add Autoclave Tape to container as indication of decontamination status – -Autoclave Minimum 1 Hr @ 121°C	-Label with Biosafety Permit# & Initial Give to EHSO Hazardous Waste Coordinator for disposal
	Contaminated with <u>Human or Animal Blood, Body Fluids or Tissue</u>	Do NOT fill to more than ¾ of the total volume		
Glass and other sharps with the potential of puncturing skin e.g. microscope slides, glass pasteur pipettes, rigid plastic pipette tips,	<u>Other Biological Contamination Only</u> e.g. Microbiological and cell cultures	-Collect in a reusable rigid puncture resistant autoclavable container, -Label with Biohazard LogoTape / Autoclave tape	-Autoclave 1Hr @-121°C -Remove Biohazard Logo Tape -or- -Decontaminate with a proven chemical method	-Package in plastic bag lined sturdy cardboard box -Seal well -Label as "Broken Glass" -Dispose of with caretakers
Liquids	Biological Contamination <u>Only</u> -No chemical or radioactive hazards		Autoclave as appropriate for volume or decontaminate with a proven chemical method	Dispose to Sewer with copious amounts of water
Pathological Waste e.g. Animal Carcasses	Consult with Radiation Safety Manual, Central Animal Care Services/Manual and your department for any special directives			Double bag and store in designated freezer for pick-up and incineration.



WASTE DISPOSAL CHART FOR LABORATORIES

Laboratory Waste



NO CHEMICALS ARE TO BE LEFT FOR THE UNIVERSITY OF MANITOBA CUSTODIAL STAFF. Empty reagent bottles are to be rinsed and have the labels de-faced. All potentially infectious materials (*biomedically involved*) must be autoclaved or de-activated using a chemical sterilizing agent prior to disposal. Animal carcasses are to be incinerated. Radioisotope users should consult the University of Manitoba "Waste Disposal Chart For Radioisotope Users".

THE ABOVE CHART IS A GUIDE. MORE INFORMATION IS AVAILABLE THROUGH THE OCCUPATIONAL HEALTH & SAFETY OFFICE (474-6633).