Laboratory Close-out Procedure and Checklist

Introduction
Proper disposition of all hazardous materials used in laboratories is, in the first instance, the responsibility of the principal investigator or researcher to whom a laboratory is assigned. Ultimate responsibility for hazardous materials management lies with each department. Proper disposition of hazardous materials is required whenever a responsible individual leaves the University or transfers to a different laboratory. ("Responsible individual" can include faculty, staff, post-doctoral and graduate students.)

If improper management of hazardous materials at closeout requires removal services from the Department of Environmental Health and Safety (DEHS) or from an outside contractor, the responsible department will be charged for this service.

Any regulatory action or fines resulting from improper management or disposal of hazardous materials will accrue to the responsible department. DEHS will not be responsible for loss incurred by individuals or departments as a result of regulation-mandated removal of hazardous materials.

Procedures
The following procedures should be completed when the responsible individual leaves the University or transfers to a different laboratory.

Chemicals

- Assure that all containers of chemicals are labeled with the name of the chemical. All containers must be securely closed. Beakers, flasks, evaporating dishes, etc. should be emptied. Hazardous chemical wastes must not be seweréd or trashed; they must be collected for disposal. Check refrigerators, freezers, fume hoods and bench tops as well as storage cabinets for chemical containers.

- Determine which chemicals are usable and transfer responsibility for these materials to another party who is willing to take charge of them. If a new user cannot be found, the materials should be disposed.

- All other chemicals should be prepared for disposal. Detailed instructions are available in the University's Hazardous Chemical Waste Management Guidebook. This process may take quite some time and should be started at least a month before departure from the laboratory. Chemical pickup must be completed before the laboratory is vacated. Waste collection will take at least a week after submitting forms to chemical waste. Unlabeled collection containers and chemical products will take longer.

- Wash off fume hood surfaces and counter tops.
• Notify Department Head when laboratory has been cleared.

**Controlled Substances**

• All aspects of controlled substance use in research must comply with the U of M Policy 2.1.4 found at [http://www.fpd.finop.umn.edu/groups/ppd/documents/policy/controlled_substance.cfm](http://www.fpd.finop.umn.edu/groups/ppd/documents/policy/controlled_substance.cfm)

• Abandonment of a controlled substance is a violation of the DEA permit under which it was held.

• To comply with Federal regulations, notify the DEA before transfer of controlled substances ownership and transfer or termination of DEA registration. Contact the Office of Regulatory Affairs (626-1462 or ORA@umn.edu) for help with this process.

• Notify Unit Registrant of pending lab closeout and work within the Unit and Department to transfer and dispose of controlled substances. Transfer or terminate controlled substance registrations with Minnesota Board of Pharmacy and DEA. Contact the Office of Regulatory Affairs (626-1462 or ORA@umn.edu) for help with this process.

• Controlled substances being held by a licensed individual should be disposed of per University procedures: [http://www.dehs.umn.edu/hazwaste_consub_dispos.htm](http://www.dehs.umn.edu/hazwaste_consub_dispos.htm)

• If controlled substances for which the licensee is unknown are found, initiate the documentation for transfer of controlled substances of unknown origin per University procedures, described at [http://www.dehs.umn.edu/hazwaste_consub_dispos.htm](http://www.dehs.umn.edu/hazwaste_consub_dispos.htm)

**Gas Cylinders**

• Remove gas connections, replace cylinder caps, and return cylinders to suppliers.

• If cylinders are non-returnable, consult hazardous waste guidebook.

**Animal and Human Tissue**

• Remove fixed tissue from preservative before disposal.

• Dispose of chemical preservatives as hazardous chemical waste.

• Dispose all human pathological waste through the university’s Bequest Program. Call 625-1111 for proper procedures.

• Animal tissue and remains should be placed in a sealed plastic bag and then placed in the red bag within the red biohazard container located in the animal morgue coolers. For cooler locations contact Research Animal Resources (RAR) at 624-9100 or [RAR Animal Care Services](mailto:RAR Animal Care Services)
• Defrost and clean refrigerators and freezers.

• If samples need to be saved, locate an appropriate researcher to take responsibility for them and notify your Department Head and RSO as to who is taking responsibility for them.

• If appropriate biological waste disposal is uncertain, contact the University Biosafety Officer at 626-6002.

Microorganisms and Cultures

• If biologically derived toxins or microorganism stocks/cultures are moved, destroyed, or transferred to another researcher’s control, call DEHS at 626-6002 and request to have the university’s biological material inventory updated.

• If an autoclave is available to decontaminate biological waste, place all microorganism stocks and culture plates in a clear autoclavable bag and follow the procedures outlined in Autoclaving Biological Waste. If no autoclave is available, place material in a red biohazard bag for pick up.

• Decontaminate liquid biological wastes and wipe down all potentially contaminated surfaces according to the procedures outlined in Biohazards and Toxin Decontamination & Spill Clean-up.

• Clean incubators, drying or curing ovens, refrigerators and freezers according to the procedures outlined in Preparing Lab Equipment for Service, Transfer, or Disposal.

• If samples or stocks need to be saved, locate an appropriate researcher to take responsibility for them and notify your Department Head and RSO as to who is taking responsibility for them.

• If appropriate biological waste disposal is uncertain, contact the University Biosafety Officer at 612-626-6002.

Radioactive Materials

• Prior to closeout of a radioactive materials use area and/or a radioactive materials use permit, it is the responsibility of the department and the authorized permit holder to assure that the following steps have been completed.

• Package all radioactive materials (stock vials, sealed sources, lead containers/shields, and wastes) and label them in accordance with the Radiation Protection Division (RPD) procedures for pickup as radioactive waste, or for transfer to another permitted use area.

• Prior to the transfer, notify the RPD (626-6002) to obtain authorization for the transfer and to assure that the new use area is properly posted and permitted by RPD.
• Arrange for pickup of all radioactive wastes through the RPD. (fax pickup request form to 5-1608.)

• Following removal of all radioactive wastes and stock materials, perform a contamination survey (and if appropriate a GM instrument survey) of all former storage and use areas within the laboratory or under the permit to be closed out. NOTE: Areas of potential residual contamination include refrigerators/ freezers, centrifuges, water baths, hoods, sinks, floor areas under waste containers, etc. Also, if there are contaminated areas or equipment in the laboratory, they must be decontaminated. A follow-up survey must be made of the decontaminated areas and the results included in the above survey.

• Provide the Department Head and the RPD with a copy of the final contamination survey.

• Schedule the Radiation Safety closeout survey by RPD (6-6002). Do not allow further use of room until the RPD closeout survey is complete and the radiation caution door posting is removed by RPD.

• If the permit holder fails to satisfactorily complete the above steps, the Department will be responsible for the completion of (or payment of costs to complete) the required closeout steps. The Department is responsible for immediate notification of the RPD if the above steps have not been completed.

Mixed Hazards

• Occasionally it is necessary to dispose of materials that contain more than one of these hazards. Contact the appropriate Department of Environmental Health and Safety number listed above for chemical, radioactive or biological agent assistance.

Equipment

• If laboratory equipment is to be left for the next occupant, clean or decontaminate it before departing the laboratory. If exhaust or filtration equipment has been used with extremely hazardous substances or organisms, alert EHS and Facilities Management.

• If laboratory equipment is to be discarded, be aware that capacitors, circuit boards, transformers, mercury switches, mercury thermometers, radioactive sources and chemicals must be removed before disposal. Contact Chemical Waste, 626-1604 for assistance.

• Equipment potentially contaminated with radioisotopes should be surveyed by Environmental Health and Safety.

Shared Storage Areas

• One of the most problematic situations is the sharing of storage units such as refrigerators, freezers, cold rooms, stock rooms, waste collection areas, etc.,
particularly if no one has been assigned to manage the unit. Departing researchers must carefully survey any shared facility in order to locate and appropriately dispose of their hazardous materials.

**Regulatory Impact**

Mishandling of hazardous materials can result in citations, fines and/or loss of right to use hazardous materials. Adverse publicity is also a frequent result. Fines are paid by the department incurring them. To avoid these consequences, follow this Laboratory Close-out Procedure in detail, and use the following Laboratory Close-out Checklist to document that all hazardous materials have been properly disposed or transferred.

**References**

Minnesota Pollution Control Agency, *Managing Antineoplastic (Chemotherapy) Waste*  
[http://www.pca.state.mn.us/publications/w-hw4-03.pdf](http://www.pca.state.mn.us/publications/w-hw4-03.pdf)

[http://www.pca.state.mn.us/publications/w-hw3-35.pdf](http://www.pca.state.mn.us/publications/w-hw3-35.pdf)
## Laboratory Close-out Checklist

<table>
<thead>
<tr>
<th>Hazardous Material/Procedure</th>
<th>Date Completed or N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemicals</strong></td>
<td></td>
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<tr>
<td>Evaluate all chemicals and label all containers.</td>
<td>______________________</td>
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<tr>
<td>Transfer responsibility for chemicals to:</td>
<td>______________________</td>
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<tr>
<td>Prepare chemical waste for shipment. Submit waste forms to DEHS's chemical waste division.</td>
<td>______________________</td>
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<tr>
<td>Clean laboratory surfaces.</td>
<td>______________________</td>
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<tr>
<td>Confirm that hazardous waste has been removed.</td>
<td>______________________</td>
</tr>
<tr>
<td><strong>Controlled Substances</strong></td>
<td></td>
</tr>
<tr>
<td>Contact U.S. Drug Enforcement Agency regarding status of permit.</td>
<td>______________________</td>
</tr>
<tr>
<td>Submit a completed Controlled Substance Disposal Form to the DEHS's chemical waste division:</td>
<td>______________________</td>
</tr>
<tr>
<td>Controlled Substance Disposal Form</td>
<td></td>
</tr>
<tr>
<td><strong>Gas Cylinders</strong></td>
<td></td>
</tr>
<tr>
<td>Return to supplier. For non-returnable cylinders, review procedures in Chemical Waste Guidebook.</td>
<td>______________________</td>
</tr>
<tr>
<td><strong>Animal and Human Tissue</strong></td>
<td></td>
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<tr>
<td>Dispose of tissue. Method:</td>
<td>______________________</td>
</tr>
<tr>
<td>Dispose of preservative. Method:</td>
<td>______________________</td>
</tr>
<tr>
<td>Clean refrigerators/freezers.</td>
<td>______________________</td>
</tr>
<tr>
<td>Transfer responsibility for samples to:</td>
<td>______________________</td>
</tr>
<tr>
<td><strong>Microorganisms and Cultures</strong></td>
<td></td>
</tr>
<tr>
<td>Autoclave waste.</td>
<td>______________________</td>
</tr>
<tr>
<td>Place waste in biohazard bag.</td>
<td>______________________</td>
</tr>
<tr>
<td>Clean incubators, ovens, refrigerators.</td>
<td>______________________</td>
</tr>
<tr>
<td>Transfer responsibility for samples to:</td>
<td>______________________</td>
</tr>
<tr>
<td><strong>Radioactive Materials</strong></td>
<td></td>
</tr>
<tr>
<td>Package all rad materials for disposal and arrange pickup.</td>
<td>______________________</td>
</tr>
<tr>
<td>Transfer responsibility to [check with DEHS's radiation protection division (RPD) first]:</td>
<td>______________________</td>
</tr>
<tr>
<td>Perform contamination survey, and resurvey, if necessary.</td>
<td>______________________</td>
</tr>
<tr>
<td>Schedule closeout survey by RPD. Date of survey:</td>
<td>______________________</td>
</tr>
<tr>
<td>Review results of RPD survey.</td>
<td>______________________</td>
</tr>
<tr>
<td><strong>Mixed Hazards</strong></td>
<td></td>
</tr>
</tbody>
</table>
Identify mixed hazards: ____________________

**Equipment**
- Clean or decontaminate equipment to be left in place. ____________________
- Contact DEHS regarding disposal of equipment. ____________________

**Shared Storage Areas**
- Check all shared storage areas for hazardous materials. ____________________

**Department Sign-off**
- Submit completed check-list to department head for signature. ____________________

Researcher Signature ____________________ Date __________
Department Head Signature ____________________ Date __________
Laboratories Closed Out (Bldg. & Rooms) ____________________