TITLE: Lab Safety – General Inspections	Version: 1
	Version Date: 2024-04-15
Signing Authority: Delaine Russo, Director, Environmental Health and Safety Office	

1 Purpose

All laboratory spaces permitted under Environmental, Health and Safety Office (EHSO) programs are subject to inspection under the Laboratory Safety Program. These inspections verify that safety program requirements documented within Environmental Health and Safety legislation are being met. This includes the need to inspect all facilities within a workplace as per the MB Workplace Safety and Health Act and Regulation.

2 Scope

This procedure applies to all teaching and research laboratories at the University of Manitoba that hold EHSO laboratory permits and all associated employees, students, volunteers, or visitors who conduct or supervise work in the lab.

3 Definitions

EHSO	Environmental Health and Safety Office
Lab	A room or area that contains hazardous materials subject to EHSO permitting for the purpose of teaching or research. This includes X-ray rooms, workshops, storage areas, and research and instructional laboratories.
LASH Committee	Local Area Safety and Health Committee
Lab Worker	Any University of Manitoba employee, student, volunteer, or visitor who is conducting work in the lab.

4 Responsibilities

It is the responsibility of the **Permit Holder** to:

- Ensure a Self-Inspection is conducted annually and submitted to EHSO.
- Correct any safety deficiencies effectively and in the required time.

It is the responsibility of **EHSO** to:

- Accompany regulatory inspectors on-site and assist in communications.
- Schedule, communicate, and conduct EHSO inspections annually.
- Review and update this document to maintain compliance with regulatory and University standards.

5 Training

Training for this procedure is included in laboratory safety training.

5.1 Self-Inspection

An inspection must be completed annually by the Permit Holder or designate. This inspection must be documented on the checklist found in Appendix A and any noted safety deficiencies must be addressed prior to submitting the inspection in EHSA as part of the permit renewal process. A record of the checklist and any associated work orders or corrective actions must be kept for five years or until the lab is decommissioned within EHSA.

5.2 Regulatory Inspections

University labs may be inspected by external regulatory agencies including, but not limited to, Workplace Safety and Health, MB Environment, Public Health Agency of Canada, Canadian Food Inspection Agency, the Canadian Nuclear Safety Commission, and Transport Canada. If the agency provides advance warning of their inspection, EHSO will communicate this to the Permit Holder as appropriate, but these agencies may show up unannounced and the University will accommodate them as much as is practicable. EHSO will accompany any inspectors on-site and require the presence of the Permit Holder or a knowledgeable designate while in a laboratory space.

6 EHSO Inspection

6.1 Participation

Due to the hazardous nature of laboratory spaces, Local Area Safety and Health (LASH) Committee inspections do not include laboratory spaces. Instead, the EHSO organizes and conducts annual inspections of permitted laboratory spaces at the University of Manitoba in coordination with the Permit Holder. Attendance for an inspection must include at least one representative of the EHSO and a representative of the applicable department or lab, who has knowledge on the work within the lab. Results from the inspection will be provided to the Permit Holder so that corrective actions can be taken to address the findings.

A summary report of laboratory inspections in each building will also be shared at the relevant LASH Committee meeting. This ensures LASH Committees are aware of the state of the labs within their designated area, any issues that are found, and corrective actions taken.

6.2 Schedule

EHSO inspections will occur in every space with a current Laboratory Permit at least once per calendar year. Notice will be provided to departments prior to inspection of their area.

6.3 Inspection Content

An inspection will include a physical walkthrough of the laboratory space as well as a record review, to encompass everything listed in the Lab Inspection Checklist found in Appendix A. This includes signage, general safety, physical hazards, fume hoods, chemical safety, biosafety, hazardous waste, and training. In addition to items on the checklist, EHSO may observe lab workers performing specific tasks and may note any other environment, health, or safety concerns that are observed in the area.

6.4 Communication and Corrective Actions

All EHSO inspections and findings are documented through the electronic data management system called EHSA.

After an inspection has occurred, results will be provided to the permit holder(s). Appropriate corrective action must occur such that findings are closed within 30 days of notification. Failure to do so without prior discussion with EHSO will constitute as an offence against the appropriate lab permit. Specific details regarding offences can be found within the Chemical Safety Program, Biosafety Program, and Radiation Safety Program, as applicable to the respective permit. Inspection findings outside of a specific lab safety permit program must also be addressed within 30 days of notice.

7 Document History

Version Number	Version Date	Description of Change	Author
1	2024-04-11	Initial Release	Nicki Harris

8 Appendix A – EHSO Lab Inspection Checklist

This is the checklist used for general lab inspections. There may additional inspections required under specific lab permits and or for equipment as described in their respective Safety Programs. An answer of "No" to any of the following items requires that corrective action be taken.

Location of inspection:	**Inspector name:**
Inspection for (Permit Holder name(s)):	**Date of inspection:**

Lab Signage				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Is a WHIP posted at the entrance(s) to the lab space? Is it up to date? (1)				
Is a copy of the current approved BFAC, Radioisotope, or X-ray Permits posted in all permitted locations? Are they up to date? (11)				
Is there a UM Waste Chart and/or UM Biohazardous Waste Chart posted? (11)				
Are all relevant post-exposure protocols posted? (11)				

General Safety & Lab Set-Up				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Is there a first aid kit available and stocked? (1)				
Is the lab free from outside food and beverage? (1, 2)				
Is lab door kept closed at all times and locked when the lab is unattended? (2)				
Are paper / computer workstations segregated from active workspaces? (2)				
Is required personal protective equipment provided and located near entrances? (1,2)				
Are personal belongings kept outside the containment zone or lab including bags, coats, and purses? (2, 11)				
Are lab coats hung separately and not one on top of the other to prevent contamination of the inner surface? (1, 2)				

Are all lab personnel taught to remove protective equipment before leaving the lab? (2,11)				
Are handwashing sinks located near the lab exit and stocked with paper towels and liquid hand soap? (1, 2)				
Are all surfaces and coatings including floors, ceilings, walls, doors, frames, casework, benchtops, and furniture cleanable, non-absorbent, and resistant to physical damage and damage from chemicals used to clean them? (2, 11)				
Is provided storage space of solid and sturdy construction? (1)				
Are freezers kept clear of ice build up such that access to the freezer and its items are not inhibited by ice formation? (1, 6)				
Is the lab clear of any evidence of rodents or insects? (2)				
Is the lab free from visible mold contamination? (1)				

Physical Hazards				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Are ambient noise levels sufficiently low to allow a normal conversation to occur? Is hearing protection used when loud equipment or procedures require their use? (1)				
Is lab equipment (such as fridges, freezers, incubators, or biological safety cabinets) with specific electrical power requirements plugged directly into wall sockets? (Not extension cords or power bars. Power bars acceptable for regular computer equipment.) (3)				
Are sharps used and disposed of properly? (Utility blades only used with holder, scissors replace blades where possible, sharps bin labelled with waste type and have disposal procedures in place.) (1, 2, 11)				

Fume hoods				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Are fume hoods cleared of all tools, reagents and supplies after use and not used for storage? (7)				
Is sash glass free from obstructions and drawn when not in use? (7)				
Do inspection tags indicate that the fume hoods have been performance tested in the last 12 months? (8)				

Emergency Response and Fire Safety				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Are exits clear of obstructions? (1)				
Is there one meter of clearance in front of the electrical breaker panel? (1)				
Are emergency shower/eyewash stations clearly identified with unimpeded access? Do tags or postings indicate that it has been inspected weekly? (1)				
Are gas shut off valves conspicuously identified? (1)				
Are fire extinguishers clear of obstructions and charged? Do tags indicate they have been inspected within the last month? (1)				
Are electrical systems and equipment maintained in good repair to prevent risk of spark or shock? (e.g., Do cords show signs of wear or damage? Are cords placed in a way to avoid excess stress or wear over time, or exposure to water or chemicals?) (3)				
Is storage of combustible solid materials (boxes, wood, plastic, cardboard, etc.) in the space minimized? Is it stored securely to prevent access by the public (arsonists)? (1, 3)				
Is there emergency lighting where hazardous materials are stored? (1)				
Is there a phone or other two-way communication system available in the lab and all containment zones? (1)				
Is a Notice of Incident form available to lab workers? (1)				
Is there a readily available spill kit with instructions for use and appropriate PPE? Is it clearly identified and in a conspicuous area? (1, 10)				

Chemical Safety/WHMIS				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Do all hazardous materials >100 ml have a supplier or workplace label on them? (1, 4)				
Are hazardous materials stored properly? (Segregated by hazard type and compatibility groups, areas well-ventilated and capable of safely containing the hazardous materials stored there, and containers kept closed, in good repair and resistant to the materials they contain.) (1)				
Are gas cylinders stored appropriately upright, restrained with racking, straps or chains, and away from ignition sources? (1)				
Are cryogens (liquid nitrogen and dry ice) stored and handled properly? (Used and stored in ventilated areas, handled with full face shield, insulated/impervious loose-fitting gloves and an apron or lab coat, and in approved containers that can withstand extreme cold without failing.) (1)				
Are flammable liquids stored and handled properly? (Stored in a flammable storage cabinet, with <300 L total kept outside of the cabinet, and away from ignition sources and oxidizing agents, containers outside a flammable cabinet are < 5 L volume or a ULC certified safety can, and heated only using water and oil baths and heating mantles.) (1)				
Are unstable chemicals (i.e., diethyl ether, isopropyl ether) shelf-dated and disposed of within six months of being opened and twelve months of purchase? (Chemicals may alternatively be processed to remove unstable peroxides that may have formed but the new date must be noted.) (1, 6)				
Are flammables requiring refrigeration stored in explosion-proof or approved flammable storage refrigerators (not domestic fridges)? (look for a label stating “Flammable storage, keep all sources of ignition away”). (1)				

Hazardous Waste				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Is hazardous waste stored in a designated area? (2,3)				
Are hazardous waste containers identified with UM hazardous waste labels? (2, 3, 11)				
Are solvent or flammable waste solution containers filled only 75% full to leave space for vapor expansion? (3)				

Are containers appropriate for the hazardous waste they contain and securely capped? (9) (e.g., same container as purchased in with updated labeling)				

Biosafety (All Biosafety Permitted Areas)				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Autoclave validation program for the facility meets the requirements of the UM Autoclave Operating guide? (2, 11)				
Containment level icon on WHIP reflects the containment level identified on the Biosafety Facility Certification? (2)				
Space has been provided and is sufficient for the storage of dedicated personal protective equipment inside the containment zone? (2)				
Storage and disposal of biological agent waste meets the requirements of the UM Biological Agent Waste Disposal Standard? (2, 11)				
Biological safety cabinet has been certified in the past 12 months according to NSA/ANSI 49 standard or manufacturer's specifications? (2, 11)				
Proper use of a Biological Safety Cabinet (2) – e.g. Are items stored in biosafety cabinet when not in use?				
Vacuum systems used for work with biological agents are constructed and operated according to the UM Biosafety Manual for Vacuum System Set Up? (11)				
Centrifuges are operated with a sealed centrifuge rotor in good repair? (2)				
Equipment inspections/repairs are documented and kept in lab records for a period of no less than 5 years. (2)				
Required personal protective equipment is worn for entry into the lab and for direct work with Biological Agents, and specified tasks. (2, 11)				
Biological agents stored outside of an identified containment zone are stored in a locked freezer posted with biohazard warning signage, risk group and emergency contact information. (2)				

Written Procedures and Records				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Is the permit information current? This includes listing all lab workers, procedures,				

hazardous materials in use, and funded projects. (12)				
Has the Laboratory Safety Checklist been completed for all New Lab Personnel (staff or students that have joined in the last five years)? (1)				
Does the lab have hazard assessments and safe work procedures for high hazard work and any projects involving biological agents or radioactive materials? (12)				
Does the lab prohibit working alone or have a written working alone procedure? (1)				
Is there a Chemical Inventory? Has it been updated within the last twelve months? (5)				
Are SDSs for chemicals on Chemwatch or via other readily accessible means? (1, 5)				

Footnotes/References

1. MB Workplace Safety and Health Act and Regulation 2022
2. Canadian Biosafety Standards
3. Internal UM Procedure (Corrective actions or other internally mandated policies)
4. Hazardous Products Regulations (SOR 2015-17)
5. UM Procedure: Chemical Safety – Inventory Management and WHMIS (2024)
6. UM Procedure: Chemical Safety – Storage (2024)
7. MD15128-2013: Laboratory Fume Hoods (Public Works and Government Services Canada)
8. UM Procedure: Chemical Safety – Fume Hood Manual (2024)
9. MB Hazardous Waste Regulation (195/2015)
10. UM Procedure: Chemical Spill Kits (2023)
11. UM Biosafety Manual
12. UM Biosafety Procedure

Additional Observations:

Additional observations may include:

- Items from other related legislation, eg. MB Fire Code 2020
- Any concerns brough forth by lab workers
- Ergonomics (awkward positioning, sufficient lighting, repetitive tasks)
- Tripping hazards
- Is there 45 cm (18 inches) of clearance around smoke detectors and sprinkler heads?
- Are any electrical receptacles <6 ft away from a water hazard (e.g., shower or safety shower) equipped with GFCI circuit protection?
- Are electrical systems and equipment maintained in good repair to prevent incidents?

Note: Additional Items not found in EHS legislation may be noted as an observation in comments or in a "other" item within the inspection report but will not be considered a finding by EHSO.

The following questions will be assessed during EHSO inspections. They are not required for self-inspections.				
Item reviewed	**Yes**	**No**	**n/a**	**Comments/Action Taken if No**
Has a self-inspection been conducted within the last year?				
Is there any equipment present that may require additional inspection as part of the Mechanical Safety Permit?				
No other safety items of concern? (see observation for details if this is marked “no”).				