Standard Operating Procedure for Biological Spill

1. Purpose

This SOP outlines the emergency response procedures in case of a Biological Spill.

2. Scope

It is applicable to all lab users.

3. Responsibility

3.1. It is the responsibility of the PI together with the laboratory staff to ensure the following:

3.1.1. A readily available and well maintained spill kit in the lab.

3.1.2. Acquire sufficient quantities and types of appropriate spill control materials.

3.1.3. Acquire recommended personal protective equipment.

3.1.4. Ensure all lab users receive appropriate biological safety training.

3.2. It is the responsibility of all lab users to acquire sufficient knowledge in biological safety and to follow this SOP in case of emergency.

3.3. Prior to responding to any biological spills, lab users should be familiar with the hazards involved. Do not attempt to handle a spill without the understanding of the risks involved.

4. Procedures

The degree of risk due to a spill depends on the volume of materials spilled, the concentration of organisms in the material spilled, the hazard of the organisms spilled, the route of infection of the organisms, the diseases caused by the organisms as well as the location of the spill.

4.1 Biological Spills in a BSL1 Laboratory

4.1.1. Notify NERI Lab Team and others in the area, to prevent contamination of additional personnel and environment

4.1.2. Put on gloves and a lab coat.

4.1.3. Cover spill with paper towels and gently apply disinfectant, proceeding from the outer edge of the spill to its center.

4.1.4. Leave in place for at least 30 minutes

4.1.5. Wipe down any contaminated stationary, furniture or equipment with disinfectant.

4.1.6. Pick up the towels and discard into a biohazard container with tongs. Use forceps, tongs or broom and dustpan to pick up any broken glass and place them into a sharps container.

Refer to Chapter 9, Section 9.3 of the NUS Laboratory Biorisk Management Manual for more information on the safe handling of sharps.

4.1.7. Re-wipe the spill area with disinfectant.

4.1.8. Remove gloves and thoroughly wash hands.

4.1.9. Decontaminate reusable items or equipment.

4.1.10. Inform laboratory personnel once the clean-up is over.

4.1.11. Report the incident to OSHE online via the NUS Accident / Incident Management System (AIMS).

Refer to Chapter 10 and 11 of the NUS Laboratory Biorisk Management Manual for more information.

4.2 Spills inside a Biological Safety Cabinet (BSC)

4.2.1. Leave the cabinet turned on.

4.2.2. Inform others in the laboratory and NERI Lab Team.

4.2.3. Put on gloves and a lab coat.

4.2.4. Spray or wipe cabinet walls, work surfaces, and equipment with disinfectant. If necessary, flood the work surface including drain pans and catch basins below the work surface with disinfectant.

4.2.5. Wait at least 30 minutes.

4.2.6. Soak up disinfectant and spill with paper towels.

4.2.7. Drain catch basin into a container.

4.2.8. Lift front exhaust grille and tray and wipe all surfaces.

4.2.9. Ensure that no paper towels or solid debris are blown into the area beneath the grille.

4.2.10. Please note that this procedure will not disinfect the air ducts, filters, fans or other interior parts of the BSC. If the entire interior of the BCS needs disinfection, contact the contracted certification vendor.

Refer to Section 4.1 of the NUS Laboratory Biorisk Management Manual for more information on safe use of biological safety cabinets.

4.2.11. Place all clean-up materials in the biohazardous waste container and dispose them through a licensed biohazard waste collector

4.2.12. Wash hands with appropriate soap/disinfectant and any exposed surfaces thoroughly after the clean-up procedure.

4.2.13. After the clean-up procedure, allow the cabinet to run for 10 minutes before resuming work.

4.3 Spills inside a Centrifuge

4.3.1. Shut the affected centrifuge off and do not open for 30 minutes to allow the aerosols to settle.

4.3.2. Warn others in the laboratory and the Lab Team.

4.3.3. Wear the appropriate PPE (e.g. lab coat, latex/nitrile gloves) before opening the centrifuge lid.

4.3.4. Use a squeeze bottle to apply disinfectant to all contaminated surfaces within the chamber taking care to minimize splashing.

4.3.5. Allow 30 minutes contact time before cleaning up the chamber.

4.3.6. Remove the buckets and rotors to a biosafety cabinet and disinfect and clean them

according to the manufacturer's instructions.

Refer to Chapter 10, Section 10.1.3.1b of the NUS Laboratory Biorisk Management Manual for reference on spills inside a centrifuge.

4.4 Spills during Transport of Biohazardous Material

4.4.1. All biohazardous material must be packed in a well-sealed primary container and a leak-proof secondary container containing absorbent material before it leaves the laboratory to be transported to another location.

Refer to Chapter 8 of NUS Laboratory Biorisk Management Manual for more information on transfer and transport of regulated and non-regulated biological materials.

4.4.2. The exterior of the secondary container must be wiped down with appropriate disinfectant so that it can be transported without wearing gloves.

4.4.3. Carry a spill kit if possible, or at least some paper towels and an appropriate disinfectant while transporting biohazardous material.

4.4.4. In case of a spill, notify people in the vicinity and clean-up the spill according to spill response procedure.

4.5 Waste Disposal

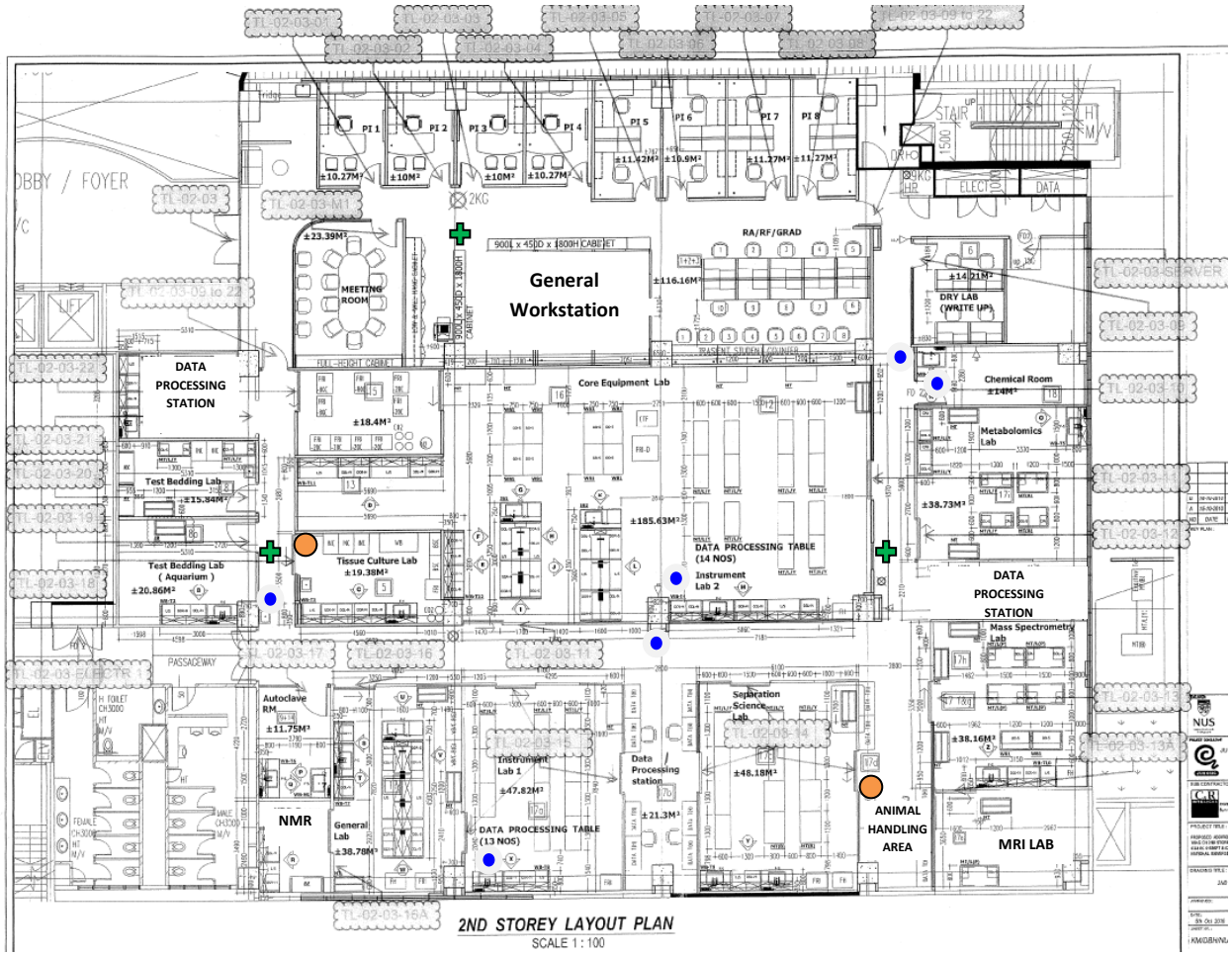
Materials used in biological spill clean-up must be disposed of as biohazardous waste. This may or may not be autoclaved before it is collected by the licensed waste collector depending on the risk level of the biological agent and the institution or departmental policy.
Refer to Chapter 7, Section 7.2 of NUS Laboratory Biorisk Management Manual for more information regarding waste disposal.

5. Reference

Adapted from NUS Laboratory Biorisk Management Manual

6. Appendix

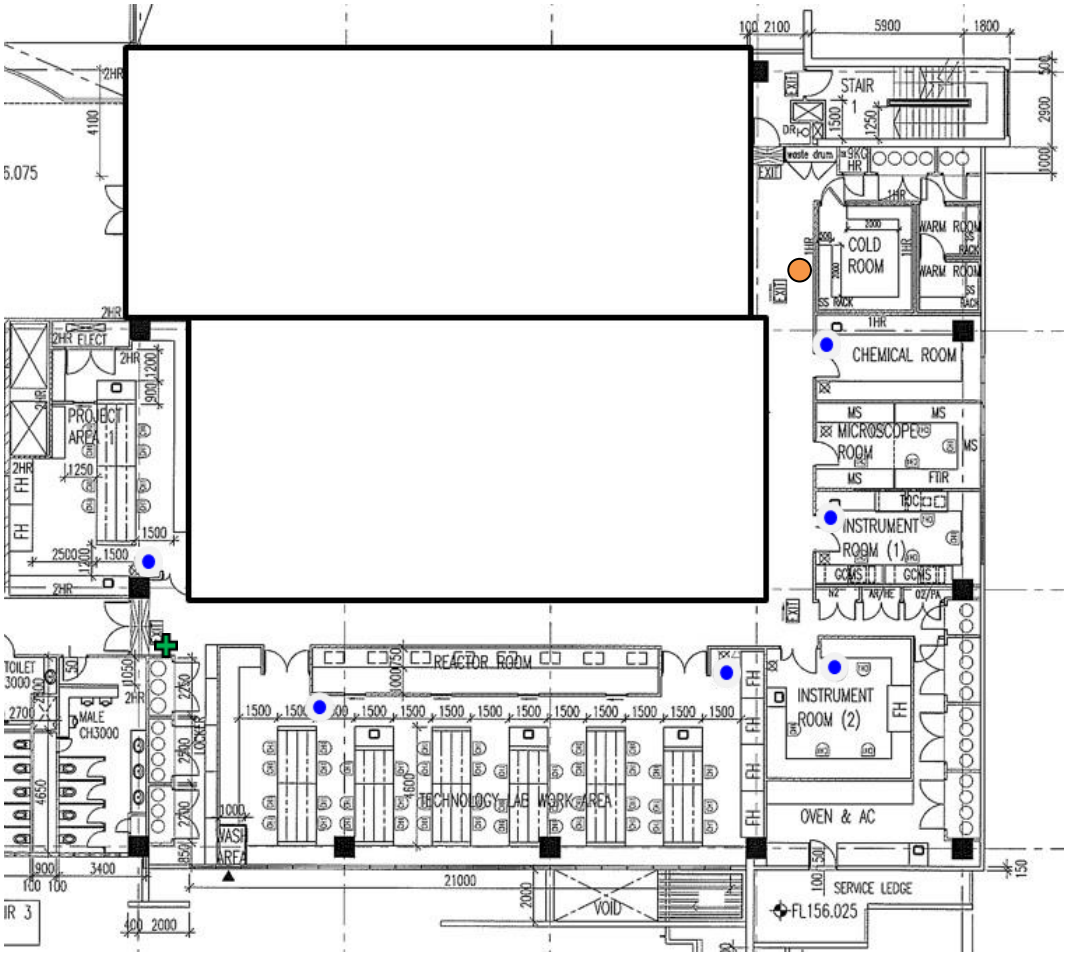
Appendix 1: Location of Biological Spill Emergency Equipment (#02-03)



LEGEND

	Emergency Shower	*6*
	Biological Spill Response Bags, PPE and Clean-up Tools	*2*
	First Aid Kits	*3*

Appendix 2: Location of Biological Spill Emergency Equipment (#08-03)



LEGEND

●	*Emergency Shower*	*6*
●	*Biological Spill Response Bags, PPE and Clean-up Tools*	*1*
✚	*First Aid Kits*	*1*