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1.0 Purpose and Applicability

The purpose of this document is to establish the process through which biological waste and medical waste is handled; whether it is sterilized on-site, or stored, packaged and shipped for off-site incineration. Biological waste is waste from the laboratory that contains or potentially contains biohazardous agents. Laws and regulations are in place to ensure the proper handling of these materials and to offer guidance to those who must do so. Generator requirements are listed in 105 CMR 480.000 and 29 CFR 1910.1030

2.0 Definitions

2.1 Biohazardous Agent:

Refers to an agent that is biological in nature and has the capacity to produce deleterious effects upon biological organisms. Biohazardous agents include, but are not limited to; bacteria, fungi, viruses, parasites, recombinant products, allergens, cultured human and animal cells and the potentially biohazardous agents these cells may contain, and other biohazardous agents as defined by State and Federal regulations.

2.2 Medical or Biological Waste:

In Massachusetts this waste is defined as waste that, because of its characteristics, may cause or significantly contribute to an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or pose as a substantial present potential hazard to human health or to the environment when improperly treated, stored, transported, disposed of, or otherwise managed. The following are included in infectious medical wastes: blood and blood products; pathological waste; cultures and stocks of infectious agents; contaminated animal waste; sharps; and biotechnology by-product effluents.

2.3 Sharps:

Items that are capable of puncturing, cutting or abrading the skin. Sharps include, but are not limited to; razor blades, syringes, and needles. Sharps shall be segregated from other wastes and placed immediately after use in red, fluorescent orange or orange-red leak proof, rigid, puncture-resistant, shatterproof containers that resist breaking under normal conditions of use and handling, and that are marked prominently with the universal biohazard warning symbol and the word "Biohazard" in a contrasting color.

2.4 Incineration:

A thermal treatment that involves the combustion of organic materials and/or substances using high temperature. Bristol Community College uses a state contracted vendor for the pick-up and disposal via incineration of sharps generated by campus laboratory activities.

2.5 Autoclave:

Closed vessel used to sterilize an object using high temperature steam.

placed into an autoclave, or if ever removed from an autoclave due to a malfunction.

4.1.2 Recordkeeping Log:

- a. Use the log sheets provided near the autoclaves. Massachusetts mandates that these records be kept up to date for every run.
- b. These log sheets are maintained in a logbook with secured, consecutively numbered pages. These logs are kept for three years.
- c. Challenge testing with *Geobacillusstearothermophilus* biological indicators are run quarterly (or more often as needed) to verify that successful kill levels have been achieved. A successful run is quantified by at least a 1.0×10^4 reduction in heat resistant organisms and the type of bacterial indicator selected should contain this volume or more of *Geobacillusstearothermophilus*.
- d. When a 4 log 10 bacterial spore reduction has not been demonstrated (results indicate bacterial growth), the processed waste must be held until corrective actions have been taken. An operations and mechanical systems assessment shall be conducted by a qualified individual who has received training from the manufacturer in the operations and maintenance of the equipment. Appropriate corrective actions shall be implemented when warranted, including but not limited to mechanical adjustments and, when applicable, recalibration of all parametric monitoring devices followed by re-treatment of the waste and additional challenge testing to confirm the effectiveness of any implemented corrective action. (105 CMR 480.150).
- e. All parametric monitoring equipment utilized in conjunction with autoclaves, shall be calibrated at a minimum annually by an individual who has received training from the manufacturer in the operations and maintenance of the equipment.
- f. When implemented, corrective actions pursuant to 105 CMR 480.150(E)(4) shall be documented in detail including the date, name of the individual implementing the corrective actions and a description of the work performed, on the back of the applicable record-keeping log fo4(n)4(q0.00000912 2 Tf 1 198.05 181.22 Tca)4(t)-2(e)4()-6(

- a. "Working" containers of infectious medical or biohazardous waste must be maintained in secondary containment and this containment must be covered and labeled with biohazard symbols. Step cans with hands-free operation and with a biohazard label are strongly recommended for this purpose.
- b. Infectious medical or biohazardous waste stored on site will be maintained by the generator within a time limit to prevent the development of offensive odors.
- c. Infectious waste is collected in clear autoclave bags (no biohazard symbol) and may not be placed on the floor while awaiting pick-up or autoclaving. This waste should *temporarily* reside in an appropriately labeled (biohazard symbols applied) bin until the waste is treated on site.
- d. Infectious medical or biohazardous waste to be treated shall be maintained in a designated accumulation area, which is secured, to deny access to unauthorized persons, marked with the appropriate warning signs, and which provides protection from animals, rodents and natural elements.
- e. Warning signs should be posted to prevent unauthorized access such as: "CAUTION, BIOHAZARDOUS WASTE STORAGE AREA".

4.3 Special Waste Requests

Special waste requests will be handled on a case by case basis. If you have any questions concerning disposal of biological wastes or other wastes please contact the safety officer.

4.4 Storage of Biological/Infectious Waste

- a. Medical waste to be collected by the contracted vendor shall be maintained in a designated accumulation area (J130), which is secured, to deny access to unauthorized persons, marked with the appropriate warning signs, and provides protection from animals, rodents and natural elements.
- b. Warning signs should be posted to prevent unauthorized access.
- c. Medical waste stored on site will be maintained by the generator for a limited time to prevent the development of offensive odors.

4.5 Treatment of Waste

1. Permitted Waste Treatment Facilities

All waste collected by the contracted vendor is transported to a permitted facility for proper treatment and subsequent disposal.

2. Waste Treatment Methods/Parameters
 - a. Sharps are subjected to incineration or other approved treatment technologies.
 - b. Small scale biohazardous waste (blood samples, etc.), from laboratories is autoclaved on sight and disposed of as explained previously.
3. The contracted vendor's waste treatment facilities operate in compliance with all applicable federal, state and local laws/regulations and maintain all required permits and licenses.