INFECTIOUS WASTE MANAGEMENT PLAN

Marshall University Robert W. Coon Medical Education Building

(01/28/2025)

**I. FACILITY** – Physical address:

 Robert W. Coon Medical Education Building

1542 Spring Valley Drive
Huntington, Cabell County

WV 25704

 Mailing address:

 Robert W. Coon Medical Education Building

 Marshall University

 One John Marshall Drive

 Huntington, WV 25755

Primary Contact: Vincent E. Sollars, PhD

 Department of Biomedical Sciences

 Room­­­­ 336N, Robert C. Byrd Biotechnology Science Center

 Marshall University

 One John Marshall Drive

 Huntington, WV 25755-9320

 (304) 696-7357 (W)

 (681) 203-4119 (cell)

 (304) 696-7207 (fax)

Alternate Contact: Julia Schreiber, BS

 Room 205, Robert W. Coon Medical Education Building

 School of Medicine Marshall University

 1542 Spring Valley Drive

 Huntington, WV 25704

 (304) 696-7095 (CEB office)

 (304) 696-7314 (Biotech office)

 (304) 617-7922 (cell)

 (304) 696-7207 (fax)

 Austin Hoffman, MA

 Room 207, Environmental Health and Safety

 Sorrell Maintenance Building

 One John Marshall Drive

 Huntington, WV 25755-9320

 (304) 696-2563 (W)

 (304) 412-5788 (cell)

 **II. OBJECTIVES OF THE WASTE MANAGEMENT PLAN**

The objectives of this plan are to:

A. Provide a safe environment for visitors, students, faculty and staff in the Robert W. Coon Medical Education Building (hereafter referred to as the CEB).

B. Provide proper management of infectious medical waste in accordance with the West Virginia Infectious Waste Rule 64-CSR-56 and the Occupational Safety and Health Administration Health Bloodborne Pathogens Standard, 29 CFR 1910.1030.

**III. HANDLING OF INFECTIOUS MEDICAL WASTE**

A. Packaging - All infectious medical waste, except free liquids, sharps and plastic or glass pipettes, shall be placed into two (2) leak-proof orange autoclave bags (double-bagged) that meet the American Society for Testing and Materials drop weight test (ASTM-D-959-80) of 125 pounds. The bags shall have the international biohazard symbol and the words "Biohazard" or "Biohazardous Materials" on them. Heavier materials shall be supported in double-walled corrugated fiberboard boxes. These boxes shall have the international biohazard symbol on them and the words "Biohazard" or "Biohazardous Materials" on them.

 Free liquids shall be contained in break resistant, tightly capped containers. These shall have the international biohazard symbol on them and the words "Biohazard" or "Biohazardous Materials" on them.

 Contaminated needles and sharps shall be collected at the point of generation in rigid leak-proof and puncture-resistant containers that have the international biohazard symbol on them and the words "Biohazard" or "Biohazardous Materials" on them. Contaminated Pasteur pipettes shall be placed into double-walled corrugated fiberboard boxes labeled for broken glass and the international biohazard label with the words “Biohazard” or “Biohazardous Materials” on them.

 Contaminated plastic or glass serological pipettes shall be segregated from other biohazard waste and placed into two (2) leak-proof orange plastic bags (double-bagged) in such a manner as to not puncture the bags. The bags must meet the American Society for Testing and Materials drop weight test (ASTM-D-959-9) of 125 lbs and be labeled with the international biohazard symbol and words “Biohazard” or “Biohazardous Materials”.

 Bags, boxes, liquid containers, and sharps containers shall not be filled beyond 75% of their total capacity. All bags, boxes, liquid containers, and sharps containers must be labeled with the supplied form label which states the origin of the waste and the signature of the operator processing the waste.

B. Handling - All unautoclaved infectious medical waste (except pathological and animal waste from the Animal Resource Facility (ARF)) that is in bags, boxes, liquid containers, or sharps containers shall be taken to Room 214 of the CEB. Bags and boxes shall be placed into the large rigid, leak-proof and puncture resistant gray bin located in Room 214, to await autoclaving. Liquid containers and sharps containers shall be placed on a shelf of the gray metal cart located in Room 214, to await autoclaving.

 Certain human pathological waste and waste derived from animals require sterilization by incineration. This rule applies to: (1) All human pathological waste greater than one-half inch in diameter. (2) Whole animals that are deliberately exposed to infectious agents or recombinant DNA and tissues larger than one-half inch in diameter derived from said animals. Both types of waste shall be placed in contractor-provided biohazardous waste shipping containers, which will have a red biohazard bag liner. These containers shall always be kept in the morgue in the CEB. Once they become full and/or weigh 50 pounds, they shall be set aside in a manner that does not create a nuisance and marked for sealing, to await pick-up by the licensed biohazard waste removal company. Whole animals or gross sections of animals (tissues larger than one-half inch in diameter) cannot be autoclaved on-site and must be disposed of as infected animal waste via the licensed waste company.

 The autoclave room technician will be responsible for the sterilization and disposal of all biohazardous waste materials. During the handling of non-sterile biohazardous materials, the technician will at a minimum wear a lab coat and heavy-duty gloves (e.g. Playtex Living Gloves) and observe all BSL1 operating procedures. Goggles shall be used when there is a risk of splashing. Individual lab technicians will wear disposal nitrile (or other synthetic) gloves and lab coats during the handling and transportation of biohazardous materials. Solid materials will be transported to the autoclave room 214 in double-bagged biohazard waste bags placed inside a secondary container. The use of lab carts will be recommended. Liquid material will be transported in the original container which will be placed within a larger secondary container (e.g. a polypropylene tub).

C. Labeling – The label on each bag, box, liquid container, and/or sharps container shall contain the following information

* department name
* phone number and the room number that the waste originated from
* date packaged
* initials of the person packaging the waste
* physical address of the CEB (Coon Education Building, Marshall University, 1542 Spring Valley Drive, Huntington, Cabell County, West Virginia, 25704)
* phone number and/or fax number
* signature of the person autoclaving the waste
* date treated and the method of treatment

D. Treatment – All unautoclaved infectious medical waste, except pathological and animal waste, shall be steam-sterilized at 121.1o C (250 o F) and 15 pounds pressure for 90 minutes. The autoclaves shall be tested every 40 hours (2400 minutes) of operation with *Bacillus geostearothermophilus*. Only the autoclaves located in CEB Room 214A will be used for the sterilization of infectious medical waste.

E. Disposal – All labeled solid infectious medical waste that has been steam sterilized and rendered noninfectious, will then be weighed, and recorded in the log book with the weight, the date weighed, and the name of the person doing the weighing. Sterilized waste will be placed in black plastic bags (double-bagged), tied shut and placed either directly into the Republic Services solid waste dumpster for immediate pick-up or in the morgue storage area if the dumpster will not have an immediate pick-up. All labeled liquid infectious medical waste that has been steam sterilized and rendered noninfectious will be disposed of into the sanitary sewer.

F. At no time shall the CEB knowingly accept infectious medical waste from another facility. All infectious medical waste generated at this facility shall be properly packaged and labeled before leaving the premises.

G. Storage - The designated storage area shall be the morgue. Access to the facility is restricted, it is vermin-proof and waterproof, and has been identified as a Biohazardous Storage Area with a sign prominently posted on the door. Once a month, or whatever schedule is deemed appropriate, the shipping containers in the storage area shall be picked up by the licensed biohazardous waste removal company. The containers shall not be stored any longer than thirty (30) days. The CEB will generate between 40 and 120 pounds of infectious medical waste per month.

H. Waste Removal - the CEB shall contract with a licensed biohazardous materials waste removal company to remove infectious medical waste, to be disposed of according to local, state, and federal regulations. The current biohazard waste disposal company under contract is GreenLeaf Envioronmental Services, LLC.

The office is:        GreenLeaf Environmental Services

 344 17th Street

 Ashland, KY 41101

This licensed biohazardous materials waste removal company shall dispose of the infectious medical waste by off-site autoclaving and/or incineration as required.

I. Contingency Plan - In the event that the CEB shall be unable to autoclave their infectious medical waste, our currently contracted licensed biohazardous materials waste company shall be contracted with to provide collection, treatment and disposal of the infectious medical waste. In the event that the licensed biohazardous materials waste removal company should be unable to provide collection and disposal services we will contract with another licensed biohazardous waste disposal company to provide collection, treatment, and disposal of the infectious medical waste.

J. Separation of sharps and liquids from solid waste - All medical waste shall be separated at the point of generation, including sharps, infectious materials, and glass. Solid infectious medical waste shall be placed into orange biohazard bags. Liquid infectious waste shall be placed into leak-proof, break-resistant tightly capped containers. Contaminated broken glass and sharps shall be placed into a leak-proof and puncture-resistant container. Non-contaminated waste shall be placed into the regular trash. Non-contaminated broken glass shall be placed into boxes labeled as containing uncontaminated broken glass and placed into the regular trash.

K. Volume Reduction - Training shall be provided to educate personnel as to the proper segregation of infectious versus noninfectious waste

**IV. TRANSPORTATION OF INFECTIOUS MEDICAL WASTE**

A. Internal Transportation - All infectious medical waste shall be transported through the CEB in closed containers. At no time shall any infectious medical waste be transported without being enclosed in a proper container.

B. External Transportation - External transportation of infectious medical waste from the CEB shall only be done by a licensed biohazardous materials waste removal company to their off-site treatment facility.

**V. MANAGEMENT OF SPILLS OF INFECTIOUS MEDICAL WASTE.**

A. An infectious medical waste spill containment and cleanup kit is located in the autoclave room (room 214A) to allow for rapid and efficient cleanup of spills.

The containment/spill kit must contain the following materials:

(1) an amount of absorbent material sufficient to absorb a minimum of ten gallons of liquid for every cubic foot of infectious medical waste.

(2) one (1) gallon of hospital grade disinfectant (e.g. Clorox) in a sprayer capable of dispersing its charge in a mist or in a stream at a distance. The disinfectant shall be hospital-grade and effective against mycobacteria.

(3) a minimum of six (6) biohazard-labeled orange plastic bags. The bags shall meet the American Society for Testing and Materials drop weight test (ASTM-D-959-80) using one hundred twenty-five (125) pounds or shall be three (3) mils thick or the equivalent and shall be accom­panied by autoclave tape or devices and labels or tags. These bags shall be large enough to enclose any box or other container nor­mally used for infectious medical waste management by that facility.

(4) two (2) new sets of overalls, and adequate numbers of disposable gloves, disposable waterproof shoe covers, boots, caps, and devices to protect the eyes and respirato­ry tract, and tape for sealing wrists and ankles. The overalls, shoe covers, and caps shall be oversized or fitted to the infectious medical waste workers or transporters, and shall be made of mate­rials im­permeable to liquids. There will also be one set of heavy-duty boots made of thick rubber and one set of gloves shall be of heavy neoprene or equivalent material. Reusable boots, gloves and breathing devices may be reused if disinfected between uses.

(5) a disposable broom and dustpan.

(6) one hundred (100) yards of boundary marking tape.

(7) an adequate first aid kit.

B. Immediately following a spill of infectious medical waste or its discovery, all personnel must leave the area until any aerosol settles or until the spill is cleaned up. Personnel must notify one of the following:

* Julia Schreiber at 304-696-7095 (CEB office) or 304-696-7314 (Biotech office) or (304) 617-7922 (cell)
* Austin Hoffman at ((304) 696-2563 (W) or (304) 412-5788 (cell)
* Dr. Vincent Sollars at (304) 696-7357 (W) or (681) 203-4119 (cell)
* MUPD at 304-696-4357

Cleanup personnel shall implement the following proce­dures for cleaning up a spill:

(1) Secure the area from entry by unauthorized persons

(2) Put on cleanup outfits appropriate for the level and nature of the spill, prepare disinfectant solution, and collect necessary equipment

(3) Spray all broken containers and spills of infectious medical waste with disinfectant and allow contact with the disinfectant for at least 15 minutes

(4) Place broken containers and spillage in the packing bags in the kit

(5) Remove liquids with absorbent material and wipe spill area dry

(6) Disinfect area again and allow to air dry

(7) Transport all waste to the autoclave room 214

(8) Clean and disinfect non-disposable items and cloth­ing using the CEB

Laundry Guidelines

(9) Remove cleanup outfits and place disposable items in a biohazard-labeled orange plastic bag

(10) Replenish the containment and cleanup kit

(11) Complete a Spill Occurrence Report. Form is available on the Institutional Biosafety Committee web site: [IBC SPILL OCCURRENCE REPORT.doc (marshall.edu)](https://jcesom.marshall.edu/media/36216/Spill-Occurence-Form.pdf)

C. Small Spills. When a spill involves a single container of infectious medical waste with a weight of less than fifty (50) lbs., or a volume of spilled liquid of less than one (1) quart, the individ­ual responsi­ble for the cleanup should select protective equipment and proce­dures that are appropriate to the level and nature of the spill. Any proposed alternate proce­dures for small quantity spills should provide protection to the health of workers and the public equivalent to that provided by the procedures above. A Spill Occurrence Report must be submitted after clean up is complete.

**VI. TRAINING**

A. The Marshall University Institutional Biosafety Committee shall be responsible for training employees on the proper handling and treatment of infectious medical waste. All employees involved in research, laboratory work, housekeeping or maintenance shall be required to attend and complete education on the OSHA Bloodborne Pathogens Standards, the Joan C. Edwards School of Medicine at Marshall University’s Bloodborne Pathogen Exposure Control Plan and Personal Protective Equipment training.

B. All personnel who will be permitted to sign the shipping manifests shall receive Haz Mat training, as mandated by the DOT, and every three years after that to maintain their certification.

**VII. DISPOSAL PLAN**

A. GreenLeaf agrees to provide the CEB with biohazardous materials waste collection and disposal through once a month pickups, or whatever schedule is deemed appropriate, at the CEB. GreenLeaf shall supply the CEB with approved fiberboard boxes or reusable 30 gallon polypropylene tubs containing red liners with Biohazard labels. No more than 45 pounds of waste may be placed in each container.

B. Manifest - All infectious medical waste shipments collected by and disposed of off-site by GreenLeaf shall generate a manifest to track the material. In accordance with the West Virginia Infectious Waste Rule 64-CSR-56, all manifest records will be retained for a minimum of three years. Only personnel trained on DOT requirements may sign the manifests.

C. Transportation - All infectious medical waste collected and transported off-site by GreenLeaf shall be in an enclosed, licensed and identified vehicle specifically used for this purpose. All transportation shall be in accordance with all State and Federal regulatory agencies.

D. Handling - The infectious medical waste that GreenLeaf shall contract to remove shall be placed into the containers so as not to puncture them. GreenLeaf shall be responsible for replacing the containers with additional containers and liners as necessary.

E. Disposal of Waste - Disposal of the infectious medical waste shall be by off-site autoclaving and/or incineration and land filling by GreenLeaf, as required by applicable state and federal laws. Pathological specimens (larger than one-half inch in diameter) and infected animal carcasses will be incinerated by GreenLeaf.

Approved by the IBC on (1/28/2025)