Roger Williams University
Hazardous Waste Contingency Plan

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(1) Introduction

(a) Purpose Statement

Per Environmental Protection Agency (EPA) 40 CFR 264 Subparts C and D, and Rhode Island Department of Environmental Management (RIDEM) "Rules and Regulations for Hazardous Waste Management" Section 5.02, this document's purpose is to provide a written plan of action for Roger Williams University (RWU; referred to as "the facility" in the regulations) in the event of a fire, explosion, or an unplanned release of hazardous waste or hazardous waste constituents which could pose a threat to human health or the environment.

Other documents including RWU's Spill Prevention, Control and Countermeasure Plan (SPCC), Emergency Response Plan (ERP) and Chemical Hygiene Plan (CHP) may be used as additional resources during an incident *(40 CFR 264.52 (b))*. The guidelines set forth in the SPCC, CHP, and Contingency Plan all serve to keep the University operating in such a way as to minimize the hazards to human health or the environment from a fire, explosion, or unplanned release of hazardous waste to the environment *(40 CFR 264.31)*. All documents are maintained at Roger Williams University at the EH&S office *(40 CFR 264.53(a))*.

This document has been prepared in accordance with the format laid out in "Rhode Island Department of Environmental Management Office of Compliance and Inspection: Appendix E: Hazardous Waste Contingency Plan Guidance" and addresses all items laid out in 40 CFR 264 Subparts C and D.

This document must be amended in the event of any of the following circumstances: the regulations are revised, the plan or any part of the plan fails during an emergency, the list of emergency coordinators changes, the list of emergency equipment changes, or the facility changes in a way that alters the necessary response actions or increases the potential of a fire, explosion, or release *(40 CFR 264.54 (a-e))*. Amendments and updates are listed in Appendix N.

(b) Site Information

Roger Williams University is a private liberal arts university located in on Mount Hope Bay in Bristol, Rhode Island. Several university buildings house labs and studios where students, faculty, and staff use chemicals and generate hazardous waste. Hazardous waste is collected at points of generation in satellite accumulation areas (SAA). RWU has one main accumulation area (MAA) where hazardous waste is stored for up to 90 days at a time. The MAA is located behind the facilities complex. There is a small gasoline storage area and a small pesticides storage area near the athletics fields that are adjacent to the North Office Building.

MSDS for RWU can be obtained online from the website: http://hq.msdsonline.com/rogerwilliamsuniversity. A master hard copy is also stored in the Environmental Health and Safety (EH&S) office in the North Office Building, and individual departments also maintain their own hard copies.

(2) Emergency Coordinators *(40 CFR 264.55)*

Emergency Coordinators (ECs) are authorized to deploy resources as necessary to respond to a fire, explosion, or hazardous waste release. The EC's must have a thorough understanding of the contingency plan, the layout of the university, how hazardous wastes are stored on campus, and locations of necessary remedial tools (spill kits, etc). EC's must be willing and able to use appropriate means to prevent, control, and contain fires, explosions, and hazardous waste releases. "Appropriate means" includes stopping activities that are causing the incident or hindering remedial efforts, and collecting, containing, and/or relocating released materials for analysis and disposal. EC's must immediately initiate the appropriate course of action as laid out in this plan in the event of a fire, explosion, or release *(40 CFR 264.51(b))*.

In the event of a hazardous waste related fire, explosion, or release, Public Safety will notify ALL personnel listed below, in this order:

Primary Emergency Coordinator
Director of Environmental Health and Safety

Phone Number (Desk): 401-254-3494
Phone Number (Cell): 401-952-4694

Alternate Emergency Coordinators (in the order they will assume responsibility)
Assistant Director of Environmental Health and Safety
Phone Number (Desk): 401-254-3781
Phone Number (Cell): 401-255-8062

Director of Facilities
Phone Number (Desk): 401-254-3233
Phone Number (Cell): 401-623-6240

(3) Emergency Procedures *(40 CFR 264.56)*

(a) Chain of Contact
All students, faculty, and staff at RWU are instructed to contact Public Safety at 401-254-4357 in the event of any emergency. Public Safety then coordinates the response with onsite staff (i.e., EH&S, Public Safety, Facilities) and outside agencies (i.e., fire department, police, etc). In the event of a fire, explosion, or hazardous waste incident in which Public Safety is notified, Public Safety will alert the Emergency Coordinator to the situation in addition to other resources as necessary. During non-business hours, Public Safety will contact the Emergency Coordinator at home or on their cell phone.

(b) Incident Management – Hazardous Waste Release (General)
Hazardous waste incidents can be split into two categories: those in which the response can be coordinated and managed by lab personnel and those in which outside help (EH&S, local

emergency response) is needed. The first category of incidents is known as an "incidental spill" and the second is known as an "emergency response."

(i) Incidental Spill
An incidental spill is defined by OSHA as a spill in which "the substance can be absorbed, neutralized, or otherwise controlled at the time of release by employees in the immediate release area, or by maintenance personnel…responses to releases of hazardous substances where there is no potential safety or health hazard (i.e., fire, explosion, or chemical exposure)" *(29 CFR 1910.120(a)(3)).* An incidental spill meets ALL of these criteria:

- Less than or equal to one gallon of spilled material
- Not acutely toxic (P-listed); not releasing toxic gas
- Did not cause a fire/explosion; not a fire/explosion hazard; not releasing flammable/explosive vapors
- Inside a building, away from floor drains, doors, etc

An incidental spill is able to be managed by the lab personnel with limited experience and limited response equipment. Examples would include small spills of salt and buffer solutions (potassium chloride, sodium acetate), latex paints, or culture media (agar). While these chemicals are relatively benign, it is still imperative that they be cleaned up properly for both safety and compliance reasons.

Appendix A is a flow chart illustrating the proper procedures to follow in the event of an incidental spill.

(ii) Emergency Response
An emergency response is defined by OSHA in *29 CFR 1910.120(a)(3)* as "…a response effort by employees from outside the immediate release area or by other designated responders (i.e., mutual aid groups, local fire departments, etc.) to an occurrence which results, or is likely to result, in an uncontrolled release of a hazardous substance."

A uniform method of initial response, called "Universal Emergency Response Procedure," should be used by the discoverer of the spill. Appendix B is a flow chart illustrating the proper procedures to follow in the event of a non-incidental spill.

Once the UERP has been initiated, the EC will determine what further course of action to take. Based on the nature of the incident, the EC will make the determination whether to initiate a Level I, II, or III response, or to downgrade to incidental spill management. Once the response has been initiated, it is up to the EC to monitor the situation and upgrade or downgrade the response level as the situation warrants.

(1) Level I Emergency Response
A Level I emergency response consists of an entirely RWU based response, which may include, but is not limited to, the EC and the departments of Environmental Health and Safety, Public Safety, and Facilities. A Level I spill response is initiated if ALL of these criteria are met:

- No injuries occurred that would require outside medical attention
- No fires, explosions, or flammable/explosive vapors being released
- Not a DOT Class 2.3 Poison Gas or 6.1 PG I Poison by Inhalation (any Zone)
- The spill may be handled using Level D PPE (see Appendix O for PPE levels)
- The spill may be handled with the emergency response equipment available onsite (see Appendix F for list of spill kits and locations)

See Appendix C for Level I Emergency Response Procedures.

(2) Level II Emergency Response

A Level II emergency response consists of an outside emergency response contractor based response (Clean Harbors; see Appendix I for Standby Emergency Response Agreement (SERA) terms), and may also include local departments such as fire and ambulance, in addition to RWU departments (EH&S, Public Safety, Facilities). A Level II spill response is initiated if ANY of these criteria are met:

- Minor injuries may have occurred that warrant outside medical attention; the safety showers/eyewashes were deployed; acute chemical exposure is suspected although may still be asymptomatic
- There was a fire or explosion, or flammable/explosive vapors were released
- The spill material is a DOT Class 2.3 Poison Gas or 6.1 PG I Poison by Inhalation (any class)
- The spill must be handled using Level C or greater PPE (see Appendix O for PPE levels)
- The spill must be handled with emergency response equipment not available at RWU (See Appendix J for a list of available equipment through Clean Harbors as part of the SERA contract).

See Appendix D for Level II Emergency Response Procedures.

(3) Level III Emergency Response

A Level III emergency response is initiated when the spilled material threatens the health and safety of the Roger Williams community as a whole, or threatens the local community outside of Roger Williams. In addition to an outside emergency contractor, local emergency departments, and RWU departments, state and federal agencies must be notified, including the Rhode Island State Police (in the event of a campus or community evacuation), the Rhode Island Department of Environmental Management (RIDEM), and the Environmental Protection Agency (EPA). Additionally, RWU officials such as the Director of Public Affairs and the President must be notified. A Level III spill response is initiated if ANY of these criteria are met:

- Significant injuries or fatalities occurred; significant chemical exposures have occurred requiring immediate attention at a hospital equipped to handle hazmat injuries

- There was a large fire/explosion; significant portions of the building have been compromised or destroyed; there are still pockets of vapors ready to ignite/explode; the fire/explosion is spreading to other buildings; reactive wastes (i.e., D003 carrying wastes; DOT Class 1 (all); DOT 4.2; DOT 4.3; DOT 5.2) are present in the vicinity of the spill and are in danger of being incorporated
- Significant amounts of acutely toxic materials have been released (P-listed; DOT 2.3; DOT 6.1 PG I or DOT 6.1 PG I PIH); spills have reacted to release large quantities of toxic gases
- Part or all of the campus needs to be evacuated
- The surrounding community needs to be evacuated
- Incident is breaching RWU boundaries into the sewer, highway, the Mount Hope Bay, or other non-RWU property

See Appendix E for Level III Emergency Response Procedures.

(c) Incident Management – Hazardous Waste Involving Oil *(40 CFR 264.52(b))*
A hazardous waste emergency response involving oil should be managed in accordance with the Roger Williams University Spill Prevention, Control, and Countermeasures (SPCC) plan, following the initiation of the Universal Emergency Response Procedure. A copy of this plan is available at the Department of Environmental Health and Safety.

(d) Incident Management – Hazardous Waste Involving Fire
A hazardous waste emergency response involving a fire should be managed in accordance with a Level II or Level III response based on the situation as a whole. The occurrence of a fire automatically excludes the incident from being managed as incidental or Level I.

(e) Incident Management - Hazardous Waste Involving Explosion
A hazardous waste emergency response involving an explosion should be managed in accordance with a Level II or Level III response based on the situation as a whole. The occurrence of an explosion automatically excludes the incident from being managed as incidental or Level I.

(f) Follow Up Reporting *(40 CFR 264.56(h)(i))*
Within 15 days of an incident requiring implementation of this contingency plan, the Emergency Coordinator must submit a report to the EPA Regional Administrator detailing:

(1) Name, address, and telephone number of the owner or operator;
(2) Name, address, and telephone number of the facility;
(3) Date, time, and type of incident (e.g., fire, explosion);
(4) Name and quantity of material(s) involved;
(5) The extent of injuries, if any;
(6) An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
(7) Estimated quantity and disposition of recovered material that resulted from the incident.

(4) Emergency Equipment *(40 CFR 264.52(e))*

(a) Alarm System *(40 CFR 264.32 (a))*

Fire alarms: All Roger Williams University buildings are equipped with a fire alarm system that is linked to the Public Safety Central Dispatch and Bristol Fire Department, which are both manned 24 hours/7 days per week. Currently, there is a schedule in place to upgrade and standardize all of the Roger Williams University fire alarm systems. The alarms are all being upgraded with Mircom control panels and Keltron wireless reporting. The new fire alarm system has point ID capability, which allows emergency personnel to determine precisely which sensor is alarming.

Fume Hood Alarms: The Kewaunee fume hoods present in the labs in the Marine and Natural Science and Engineering buildings are equipped with alarms, but these alarms are in place only to signal that not enough air is being drawn up by the fume hood (< 100 cfm). Therefore while an alarm sounding may be indicative of a chemical or mechanical issue, it is also likely to indicate improper sash operating height. The operating sash height on these fume hoods is six inches.

(b) Communication System *(40 CFR 264.32 (b))*

When working in the lab and studio setting with chemicals and hazardous waste, all personnel have two immediate methods of communication – the buddy system and telephone access *(40 CFR 264.34(a))*. All lab work and waste handling is to be conducted in pairs as laid out in the Chemical Hygiene Plan. Additionally, all lab and studio spaces have immediate access to a landline telephone. Signage has been posted adjacent to each phone with emergency contact telephone numbers, including Public Safety, the Primary and Secondary Emergency Coordinators, the emergency response contractor, and the local fire and ambulance departments. Please see Appendix H for a sample sign.

When working in the hazardous waste main accumulation area, all personnel are required to carry a cell phone and a two-way radio with direct access to the Public Safety channel *(40 CFR 264.34(a-b))*. Emergency numbers are posted on the inside and outside of the door to the main.

All EH&S cell phones and two-way radios are checked weekly to make sure they are in working order *(40 CFR 264.33)*.

(c) Fire Extinguishers *(40 CFR 264.32 (c))*

The fire extinguishers on campus are inspected on monthly, annual, and 5 year cycles. The monthly inspections are visual inspections conducted by Public Safety during their routine walk throughs (*NFPA 10 Standard 7.2.1.2*). Annual inspections are performed by Perry on the Bristol campus and Firex at the Portsmouth Bay Point Inn and Conference Center (*NFPA 10 Standard 7.3.1.1.1*). The annual inspections are recorded on tags affixed to the extinguishers and complete records are housed at EH&S. Every five years, the extinguishers are re-pressurized and have a hydrostatic test completed (*NFPA 10 Standard 8.3.1*).

(d) Sprinkler Systems *(40 CFR 264.32 (d))*
Sprinkler systems on campus are located in the following buildings: Maple Residence Hall, Cedar Residence Hall, Law School, Recreation Center, Willow Dorms 1-7, Performing Arts, School of Architechture, Library, Bayside Dorms 1-3, Marine and Natural Science, Stonewall Dorms 1-4, Facilities, ELS (Rec Addition), Commons Dining. In addition to the wet sprinkler systems, the library also has a Halon suppression system in the archives section.

The sprinkler systems are tested in accordance with NFPA 25 table 5.1.

(e) Spill Control *(40 CFR 264.32 (c))*
Spill kits have been placed at various sites around campus. Spill kits are checked and stocked on a monthly basis by EH&S. Please see Appendix F for a facility site diagram showing the locations of the spill kits on campus.

30 gallon Petroleum kits contain:
2 rolls of Petroleum Sorbent Folded spill pads 3 x 5 gallon disposal bags 3 bag ties
30 gallon Petroleum kits are located at:
Environmental Health and Safety

30 gallon Chemical kits contain:
2 rolls of Chemical Sorbent spill pads 3 x 5 gallon disposal bags 3 bag ties
30 gallon Chemical kits are located at:
Mechanic's Shop Bayside Residence 200 Building (Mech Room)

55 gallon Chemical kits contain:
Gloves Plastic Sheeting Caution Tape Vermiculite
Hazardous Waste Stickers 15 Spill pads
55 gallon kits are located at:
MNS 106 MNS 203 Commons Basement Fine Arts West Room
SAAHP Photo Lab SAAHP Basement

Additionally, there is a 5 gallon spill kit with pH paper, gloves, spill pads, and a DOT hazardous materials table located in the Chemical Hygiene and Safety Officer's office.

(f) Personnel Protection *(40 CFR 264.31)*
RWU minimizes risk by utilizing engineering controls, administrative practices, and personal protective equipment. Engineering controls include the use of flammable and corrosive storage cabinets for storing stock chemicals, the use of fume hoods when working with chemicals in the laboratory, and substituting less hazardous substances and practices whenever possible. Administrative practices include standard labeling practices, posting signage for reactions in process, mandatory hazardous waste management training for all generators, and maintaining a minimal chemical inventory. Personal protective equipment varies based on the materials being handled. Please see Appendix O for a list of personal protective equipment onsite and which chemicals/hazards it is designed to handle.

If the risks associated with an incident exceed the capabilities of the controls, practices, and equipment on hand, it is the individual's responsibility to secure the scene, evacuate the area, and call Public Safety for back-up.

(g) Testing and Maintenance of Equipment *(40 CFR 264.33)*
Fume hoods and alarms are certified and inspected by licensed Vendors. Annual inspection certificates are kept at EH&S.

Fire extinguishers are tested annually by licensed Vendors (see Section (c), "Fire Extinguishers" above). Tags which log inspection dates and inspector initials are kept on the fire extinguishers and hard copies are kept at EH&S.

Fire suppression systems are tested quarterly by licensed Vendors.

Spill kits and decontamination supplies are checked and restocked on a monthly basis by EH&S. Documentation is kept in logs which are kept at EH&S.

Eyewash and safety showers are tested and flushed on a weekly basis by University personnel. Documentation is kept at EH&S.

(5) Required Aisle Space *(40 CFR 264.35)*

Aisle space access to hazardous waste satellite accumulation areas (SAA) is maintained in labs and studio spaces through various administrative controls. Administrative controls include maintaining best management practices in the lab and studio setting, which specifies keeping personal effects such as bags and coats outside of the labs and out of egress routes. Administrative controls also include demarcating SAA's with yellow and black striped safety tape.

Lab and studio safety equipment areas, such as eyewash and safety shower stations and spill kit locations, are also demarcated with yellow and black striped safety tape.

Aisle space access to the hazardous waste stored in the main accumulation area (MAA) is maintained through administrative controls. Aisle space is checked during the weekly MAA inspection and corrected if found to be insufficient. Aisle space is also checked any time new waste is added to the MAA.

(6) Evacuation Routes *(40 CFR 264.52 (f))*

Evacuation routes are located on the facility site diagram in Appendix F. The signal to evacuate a building is the fire alarm system. In the event of a campus evacuation, notification would be provided to all personnel by the Rave ALERT communication system, via e-mail and telephone

messages by the Department of Information Technology, and verbally to the students in resident halls via the COREs and Hall Directors.

(7) Facility Site Diagram *(40 CFR 264 .52(f))*

Please see Appendix F for a Facility Site Diagram. This diagram shows the locations of spill kits, emergency equipment, the main accumulation area, and primary and secondary evacuation routes.

(8) Appendices

See the following pages for all appendices.