

RCRA Inspection Report

1) Inspector and Author of Report

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U.S. Environmental Protection Agency, Region 4
Enforcement and Compliance Assurance Division
Chemical Safety and Land Enforcement Branch
RCRA Enforcement Section
61 Forsyth Street, S.W.
Atlanta, Georgia 30303

2) Facility Information

NCSU Main Campus
2620 Wolf Village Way
Raleigh, NC 27695

EPA ID#: NCD000830737
NAICS #: 61131 – Colleges, Universities, and
Professional Schools

3) Responsible Officials

Karen Trimberger
Environmental Affairs Manager
katrimbe@ncsu.edu

4) Inspection Participants

Karen Trimberger, NCSU
James Atkinson, NCSU

Jenne Walker, North Carolina Department of
Environmental Quality (NCDEQ)
Mark Anthony Relon, USEPA

5) Date of Inspection

July 11, 2023, 8:58am

July 12, 2023, 9:30am

6) Applicable Regulations¹

Resource Conservation and Recovery Act (RCRA) Sections 3002 (42 U.S. Code – Annotated U.S.C.A. 6925 and 6927), and 40 Code of Federal Regulation (C.F.R.) Parts 260 - 270, 273, 278, & 279; The North Carolina Solid Waste Management Law, N.C.G.S. § § 130A-17 to -28 and 130A-290 to - 310.22, and North Carolina Hazardous Waste Management Rules, 15A NCAC 13A .0101 to .0119; and Hazardous Waste Permit NCD000830737-R2.

Pursuant to 15A NCAC 13A .0102(b) [40 C.F.R. § 260.10], a large quantity generator of hazardous waste (LQG) is a generator who generates greater than or equal to 1,000 kilograms (2,200 pounds) of non-acute hazardous waste in a calendar month.

Pursuant to 15A NCAC 13A .0119(a) [40 C.F.R. § 273.9], a small quantity handler of universal waste (SQHUW) is a universal waste handler who does not accumulate 5,000 kilograms or more of universal waste (batteries, pesticides, mercury-containing equipment, lamps, or aerosol cans, calculated collectively) at any time.

¹ As the State's authorized hazardous waste program operates in lieu of the federal RCRA program, the citations of those authorized provisions will be to the authorized State program. However, for ease of reference, the federal citations will follow in brackets.

7) **Purpose of Inspection**

The purpose of this inspection was to conduct an unannounced compliance evaluation inspection to determine NCSU Main Campus' compliance with the conditions of its RCRA Hazardous Waste Facility Operating Permit [NCD000830737-R2], the applicable requirements of RCRA and the corresponding North Carolina regulations. This was an EPA lead inspection.

8) **Facility Description**

North Carolina State University (NCSU or Facility) is a "Land Grant" University founded in the 1880s and is the primary technological institute in the University of North Carolina System. NCSU offers undergraduate through post-graduate degrees at colleges within NCSU that specialize in Agriculture and Life Sciences, Design, Education, Engineering, Natural Resources, Physical and Mathematical Sciences, Textiles and Veterinary Medicine. Research facilities are located on and off the NCSU Main Campus. NCSU also provides studies in all areas of liberal and performing arts and sciences. Its major missions entail teaching, research, and extension services.

NCSU owns several major offsite teaching and research facilities in Raleigh, including (but not limited to) Centennial Campus, the Centennial Biomedical Campus (College of Veterinary Medicine), and Lake Wheeler Field Laboratory/Research Stations. In addition, other research units and field laboratories are located throughout the state. Statewide, NCSU covers about 2,500 acres (includes main campus and all other campuses, combined). NCSU operates approximately 1,500 to 2,000 teaching and research laboratories distributed through these numerous buildings, colleges, and properties. The NCSU operations also include few support services such as maintenance, grounds, motor pool and an athletic department. The NCSU is owned by the State University system and consists of approximately 1,500 acres. The NCSU serves a total of over 30,000 students and 10,000 employees. The NCSU Main Campus consists of approximately 20,000 students.

According to the most recent notification to Division of Waste Management - NCDEQ, the NCSU Main Campus is operating as a large quantity generator (LQG) of hazardous waste, transporter of hazardous waste and permitted treatment, storage, and disposal facility (TSDF). However, effective March 1, 2018, portion of the campus operates under 40 C.F.R. Part 262 - Subpart K (Alternative Requirements for Hazardous Waste Determination and Accumulation of Unwanted Material for Laboratories Owned by Eligible Academic Entities) and managed accordingly.

Hazardous waste may be generated at various support service areas such as maintenance, grounds, motor pool and the athletic department. These areas are subject to regulation under the LQG rules. Hazardous waste is picked up from generation and satellite accumulation areas (SAAs) weekly and transported to the permitted Waste Management Facility (WMF) for storage prior to offsite shipment for disposal. NCSU is permitted to transport hazardous waste from university owned offsite generation areas.

NCSU is permitted to bulk and store hazardous waste through the RCRA permit issued by NCDEQ. The most recent renewal permit became effective on January 6, 2015. The permit expires on January 6, 2025. NCSU Main Campus is authorized to store the following hazardous

waste streams or categories of hazardous waste in accordance with the conditions specified in the WMF's permit: D001-D043, F001-F005, F027, F039, and multiple P and U-listed wastes. The

City of Raleigh provides domestic sanitary sewer and drinking water to the NCSU Main Campus. Access to the Facility is controlled through various security check-in points or keycard access for campus buildings/rooms.

NCSU uses Clean Earth as the contractor to handle and manage the hazardous waste containers in the WMF. Two employees of Clean Earth work onsite five days a week and pick-up and transport hazardous waste, non-hazardous waste, universal waste, and low-level radioactive waste from Main Campus to the WMF. An on-line waste pick-up request and tracking system is used to initiate waste pick-up from points of generation across the NCSU campus. The generator (must be a NCSU student or employee) creates a request for waste pickup by entering all required information about the waste container(s). The request for pick-up is then submitted on-line to the NCSU's Environmental Health and Safety (EHS) staff at which time it is assigned a unique tracking number. EHS staff reviews the request, assigns applicable waste codes, and a pickup is scheduled. Once pick up is complete, the contractor conducts the sorting, bulking, lab packing, labeling, and dating of the containers. Hazardous waste manifests are prepared for shipment of all hazardous waste containers offsite to a permitted TSDF. The contractor also conducts various inspections of the WMF.

The NCSU Main Campus EHS personnel prepare waste profiles/waste acceptance, schedule pick-ups at the hazardous waste generator sites, prepare the manifests for incoming shipments of hazardous waste (campus wide), conduct hazardous waste audits, and give hazardous waste training to all hazardous waste generators at NCSU.

WASTE STREAMS: Waste streams that the WMF may accept are described above in the Facility Description portion of this report. Waste categories that are routinely generated at NCSU include:

- Hazardous Waste: spent solvents, expired chemicals, waste flammable liquids, lab packs, waste paint; and
- Other Waste Streams: Ballast (PCB and non-PCB containing); Used Oil – used oil generated on-site is sent off to be recycled; Universal Waste – used fluorescent lamps, used batteries, mercury containing equipment.

9) **Previous Inspection History**

North Carolina Department of Environmental Quality (NCDEQ) has conducted 3 RCRA CEIs at the Facility between 2020 and 2023 and found 16 violations during those inspections.

On July 28, 2022, NCDEQ conducted the most recent RCRA CEI at the Facility and found no apparent violations of RCRA's requirements.

10) Opening Conference

On July 11, 2023, EPA inspector Mark Anthony Relon, accompanied by NCDEQ inspector Jenne Walker, arrived at NCSU at approximately 8:58am. Karen Trimberger, Environmental Affairs Manager, immediately received the inspectors. Karen Trimberger, and the inspectors were joined by James Atkinson, for the opening conference. The inspectors introduced themselves, showed their credentials to Karen and James, and explained the purpose of the visit. On July 12, 2023, the inspectors arrived at NCSU at approximately 9:30am for a second time to conduct inspections on NCSU's campus buildings under Subpart K regulations.

The inspectors described the anticipated use of equipment (digital camera) during the inspection and provided a request for records. The EPA inspector explained that the Small Business Regulatory Enforcement Fairness Act's classification of a "small business" is generally set by the Small Business Administration using the business' SIC/NAICS code and annual receipts or number of employees. A copy of the EPA's information sheet for small businesses can be found at <https://www.epa.gov/sites/production/files/2017-06/documents/smallbusinessinfo.pdf>. The EPA inspector also discussed the company's ability, pursuant to 40 C.F.R. § 2.203, to assert a business confidentiality claim for information submitted to EPA. The company did not assert a business confidentiality claim.

Karen provided an overview of the Facility's history and current operations during the opening conference. The inspection participants also discussed health and safety protocols and required personal protective equipment before Facility representative led the inspectors on a tour of the Facility operations.

11) Inspection Observations

Facility Area with Permitted Storage/WMF

NCSU manages hazardous waste permitted storage areas/rooms in the WMF. Room 214 is the main waste management area, consisting of four cells separated by partition walls, with containment trenches in each cell. There are separate rooms in the WMF designed for storage of specific types of waste. The WMF was identified with a sign which read "danger, hazardous waste storage." NCSU manages ignitable and reactive waste in the WMF, and the inspectors observed "No Smoking" signs on the front entry doors.

The WMF is equipped with an internal communications or alarm system capable of providing immediate emergency instruction to Facility personnel; it is equipped with a device capable of summoning emergency assistance from local police departments, fire departments, or state or local emergency response teams; it is equipped with portable fire extinguishers, fire control equipment, spill control equipment, and decontamination equipment; and it is equipped with water to supply water hose streams, or foam producing equipment, or automatic sprinklers, or water spray system.

WMF: Cell 214-R Reactives

NCSU manages universal waste lamps in Cell 214-R. The inspectors observed three 4-foot, two (2) 12-foot, one 5-gallon, and one 1-foot by 1-foot box containers of universal waste lamps in this area during the inspection. Each container of lamps was closed, marked with an

accumulation start date, and were labeled universal waste lamps (Figure 3). The oldest date observed on any container of lamps was May 17, 2023.

NCSU also manages reactive wastes generated by campus laboratories and a flammable cage with compressed gas cylinders in this area (Figure 3). Inspectors observed two 5-gallon containers which were closed, marked with an accumulation start date, labeled hazardous waste, and identified with an indication of the hazards of the contents (Figures 1 and 2).

WMF: Cell 214-I Inorganic

NCSU manages inorganic waste generated by campus laboratories in this section of the WMF. Inspectors observed all containers within Cell 214-I closed, marked with an accumulation start date, labeled hazardous waste, and identified with an indication of hazards of the contents (Figure 4 through 9).

WMF: Cell 214-O Organic

NCSU utilizes Cell 214-O for managing hazardous waste organics generated by laboratories within the campus. The inspectors observed one 55-gallon, one 15-gallon, one 5-gallon, and one 2.5-foot by 2-foot box of containers in this storage area. The 55-gallon, 15-gallon, and 5-gallon containers were closed, labeled hazardous waste, and identified with an indication of hazards of the contents. The inspectors observed the 2.5-foot by 2-foot box closed, labeled D008 and D022 hazardous waste solid, with no indication of hazards of the contents (Figures 10 and 11). Facility personnel corrected the indication of the hazards of the contents at the time of the inspection (Figure 12).

Pursuant to 15A NCAC 13A .0107(a) [40 C.F.R. § 262.17(a)(5)(i)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with the following: the words “Hazardous Waste”; an indication of the hazards of the contents; and the date upon which each period of accumulation begins clearly visible for inspection on each container.

WMF: Cell-214-U Utility

NCSU manages waste generated by the campus in this section of the WMF. Inspectors observed three 55-gallon and one 30-gallon containers. All containers within Cell 214-U were closed, marked with an accumulation start date, labeled hazardous waste, and identified with an indication of hazards of the contents.

WMF: Room 215

NCSU manages a hazardous waste storage area and a Satellite Accumulation Area (SAA) in Room 215 for managing hazardous waste halogenated solvents, non-halogenated solvents, acids, etc. that is generated by laboratories within the campus. The inspectors observed four 55-gallon containers in the SAA. The SAA containers were located inside a processing machine to fill the 55-gallon containers, and it was equipped with a drum cover lid, which was closed. The 55-gallon containers were all labeled hazardous waste and identified with an indication of hazards of the contents.

Inspectors also observed five 55-gallon, two 35-gallon, four 8-gallon, and one 5-gallon containers within this storage area. All containers were marked with an accumulation start date and labeled hazardous waste. All of the containers except for one 35-gallon container had an indication of hazards of the contents (Figure 13 and 14). Facility personnel corrected the indication of the hazards of the contents at the time of the inspection.

Pursuant to 15A NCAC 13A .0107(a) [40 C.F.R. § 262.17(a)(5)(i)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with the following: the words “Hazardous Waste”; an indication of the hazards of the contents; and the date upon which each period of accumulation begins clearly visible for inspection on each container.

WMF: Room 206

NCSU manages universal or non-regulated hazardous waste generated by the campus in this section of the WMF. In the permit, it states that radioactive mixed waste is stored in this room. At the time of the inspection, Facility personnel stated there were no radioactive mixed waste currently being stored; only universal or non-regulated hazardous waste was stored there. The oldest date observed on any container of universal waste lamps was April 11, 2023.

WMF: Room 207

NCSU manages non-regulated hazardous waste generated by the campus in this section of the WMF. No further observations were addressed in this area.

WMF: Room 209

NCSU manages waste generated by campus laboratories in this section of the WMF. In the permit, it states that refrigerated, dangerous when wet, recyclable mercury and batteries are stored there. Inspectors observed all Room 209 containers closed, marked with an accumulation start date, labeled hazardous waste, and identified with an indication of hazards of the contents.

Inspectors observed discoloration from absorbent padding for reactive metals (e.g., lithium metal) within a flammable cabinet (Figure 15). Although, containers did not appear to be leaking, odors occurred after opening the flammable cabinet. Inspectors recommended Facility personnel to replace the padding in case the padding was creating the odor.

At the time of the inspection, inspectors observed 11 5-gal containers, five (5) one-foot square boxes, and 15 containers of various sizes ranging from 100-milliliter to 500-milliliter bottles (Figures 16 and 17). The containers consisted of various chemicals such as vanadium, phosphorus pentoxide, sodium hydrosulfide, and bromine. The Permit states that the maximum storage capacity for Room 209 is 45-gallons. The inspectors observed containers totaling more than 90-gallons.

Pursuant to HW Permit NCD000830737-R2, Part III- Storage in Containers, the Permittee shall store no more than 45-gallons of hazardous waste in Room 209. Dabney Hall

Dabney Hall is a campus building which consists of multiple chemical laboratories for NCSU's chemistry department and includes research laboratories, teaching labs, and offices.

Dabney Hall: Room 842

In the Laboratory Management Plan, it states "Laboratories should conduct routine reviews of inventories and chemical stocks to identify any obsolete chemicals or substances at least once per quarter." Inspectors observed in a fume hood multiple containers unorganized and placed in a secondary containment bin (Figure 18). Inspectors asked Facility personnel the reasoning for the arrangement. Facility personnel stated that Room 842 was currently undergoing an inventory check to determine whether any of the containers would be considered unwanted material. At the time of the inspection, it was unclear of when the inventory check was last conducted. Inspectors recommended Facility personnel organize the containers to prevent potential mishandling, damage, or use while making unwanted material determinations.

Pursuant to 15A NCAC 13A .0107 (g) [40 C.F.R. § 262.206(a)(2)], the following information may be affixed or attached to the container, but must at a minimum be associated with the container: (i) the date that the unwanted material first began accumulating in the container, and (ii) information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s), pursuant to 40 C.F.R. § 262.11. Examples of information that would allow a trained professional to properly identify whether an unwanted material is a solid or hazardous waste include, but are not limited to: (A) The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction, (B) Whether the unwanted material has been used or is unused, and (C) A description of the manner in which the chemical was produced or processed, if applicable.

Dabney Hall: Room 847

Inspectors observed a 3-gallon container with a damaged secondary containment bin (Figure 19). Inspectors recommended Facility personnel to replace the secondary containment bin and was replaced at the time of the inspection. Under the Laboratory Management Plan, it states "Areas where unwanted materials are accumulated must have secondary containment sufficient to collect incidental spills that might occur when adding waste to containers."

Dabney Hall: Room 820

Inspectors observed a used oil spill within their secondary containment bin (Figures 20 through 22). Inspectors asked Facility personnel to clean up the spill. Facility personnel cleaned up the spill at the time of the inspection.

Pursuant to 15A NCAC 13A .0118(c) [40 C.F.R. § 279.22(d)], upon detection of a release of used oil to the environment, the facility must clean up and manage properly the released used oil and other materials.

Dabney Hall: Room 830

Inspectors observed four (4) 5-gallon containers of unidentified unwanted material. One of the 5-gallon containers was in a section labeled "Unwanted Organic Material" (Figure 24). The other three (3) 5-gallon containers were in a section labeled "Unwanted Aqueous Material" (Figure 25). The four (4) 5-gallon containers did not have an unwanted material label, accumulation start

date, and any sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste.

Inspectors asked Facility personnel about the container labeled “Swern Ox Unwanted Material” (Figure 23). Inspectors asked for a waste profile or waste/unwanted material determination since the label did not include an accumulation start date and any sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste.

Pursuant to 15A NCAC 13A .0107 (g) [40 C.F.R. § 262.206(a)(2)], the following information may be affixed or attached to the container, but must at a minimum be associated with the container: (i) the date that the unwanted material first began accumulating in the container, and (ii) information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s), pursuant to 40 C.F.R. § 262.11. Examples of information that would allow a trained professional to properly identify whether an unwanted material is a solid or hazardous waste include, but are not limited to: (A) The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction, (B) Whether the unwanted material has been used or is unused, and (C) A description of the manner in which the chemical was produced or processed, if applicable.

Dabney Hall: Room 734

Inspectors observed three (3) 4-liter containers of unwanted material. One of the three (3) containers was labeled “Unwanted Organic Waste No CHCl_3 or CH_2Cl_2 ” (Figures 26 through 28). Note the terms “No CHCl_3 or CH_2Cl_2 ” means no halogens.

Pursuant to 15A NCAC 13A .0107 (g) [40 C.F.R. § 262.206(a)(1)(i)], the following information must be affixed or attached to the container (i) the words “unwanted material” or another equally effective term that is to be used consistently by the eligible academic entity and that is identified in Part I of the Laboratory Management Plan.

Dabney Hall: Room 708

Inspectors observed a fume hood with an unwanted material area and various unidentified containers in a secondary containment bin (Figure 29). The containers observed were two (2) 2.5-liter containers, one 4-liter container, one container with barium sulfate, one container with solid unwanted material, and one container with unknown contents (Figure 30). Inspectors asked Facility personnel to properly identify each container within the secondary containment bin. On July 25, 2023, Facility personnel provided documentation in an email that disposal labels have been requested, obtained and placed on the containers.

Pursuant to 15A NCAC 13A .0107 (g) [40 C.F.R. § 262.206(a)(2)], the following information may be affixed or attached to the container, but must at a minimum be associated with the container: (i) the date that the unwanted material first began accumulating in the container, and (ii) information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s), pursuant to 40 C.F.R. § 262.11. Examples of information that would allow a trained professional to properly identify whether an unwanted material is a

solid or hazardous waste include, but are not limited to: (A) The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction, (B) Whether the unwanted material has been used or is unused, and (C) A description of the manner in which the chemical was produced or processed, if applicable.

Dabney Hall: Room 722

Inspectors observed unwanted material containers, and a hazardous spill kit potentially blocking the back entrance of the laboratory (Figure 32). Inspectors recommended Facility personnel to move the unwanted material in another location to not cause emergency exit issues. Facility personnel corrected it at the time of the inspection.

Inspectors observed two (2) 1-liter containers labeled “Diethyl Ether.” The two (2) containers did not have proper unwanted material labels, an accumulation start date, and sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste (Figure 31).

Pursuant to 15A NCAC 13A .0107 (g) [40 C.F.R. § 262.206(a)(2)], the following information may be affixed or attached to the container, but must at a minimum be associated with the container: (i) the date that the unwanted material first began accumulating in the container, and (ii) information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s), pursuant to 40 C.F.R. § 262.11. Examples of information that would allow a trained professional to properly identify whether an unwanted material is a solid or hazardous waste include, but are not limited to: (A) The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction, (B) Whether the unwanted material has been used or is unused, and (C) A description of the manner in which the chemical was produced or processed, if applicable.

Dabney Hall: Room 440

Inspectors observed working containers with stained secondary containment bins (Figures 33 and 34). Inspectors recommended Facility personnel replace the secondary containment bins and was replaced at the time of the inspection.

12) Records Review

Contingency Plan and Quick Reference Guide (QRG):

The actions that Facility personnel should take in response to an emergency are described in the Facility’s Contingency Plan.

The plan describes actions Facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water at the Facility.

The plan describes arrangements agreed to with the local police department, fire department, other emergency response teams, emergency response contractors, equipment suppliers, local hospitals, or the Local Emergency Planning Committee.

The plan lists the names and emergency telephone numbers for persons identified as emergency coordinators. Karen Trimberger is listed as the primary emergency coordinator, and the other individuals are listed in the order in which they will assume responsibility as alternates.

The plan includes a list of all emergency equipment at the Facility. The list includes fire extinguishing systems, spill control equipment, communications and alarm systems, and decontamination equipment. The list appears to be up to date. The plan includes the location and a physical description of each item on the list, and a brief outline of its capabilities.

The plan includes an evacuation plan for personnel. This plan describes signal(s) to be used to begin evacuation, evacuation routes, and alternate evacuation routes.

A copy of the Contingency Plan (and its quick reference guide) was most recently submitted to the police department, fire department, hospital, State, and local emergency response teams on February 14, 2022.

The quick reference guide includes the types/names of hazardous waste in layman's terms and the associated hazard associated with each hazardous waste present at any one time; the estimated maximum amount of each hazardous waste that may be present at any one time; the identification of any hazardous wastes where exposure would require unique or special treatment by medical or hospital staff; a map of the Facility showing where hazardous wastes are generated, accumulated and treated and routes for accessing these wastes; a street map of the Facility in relation to surrounding businesses, schools and residential areas; the locations of water supply; the identification of on-site notification systems; and the name of the emergency coordinator(s) and emergency telephone number(s).

Training Records:

The inspectors reviewed Facility job descriptions and employee names. Each description included the requisite skill, education, or other qualifications, and duties of Facility personnel assigned to that position.

NCSU provided a written description of the type and amount of both introductory and continuing training to be given to each person filling the positions listed above. The inspectors reviewed records of employee hazardous waste training completed in 2022 and 2023.

Waste Manifest and Land Disposal Restriction (LDR) Records:

The inspectors reviewed available hazardous waste manifest records and land disposal restriction forms for shipments of hazardous waste sent since the 2022 calendar year. Hazardous waste manifest records show that D004, D001, D005, D006, D007, D008 hazardous waste flammable liquids (methylene chloride, chloroform), D001, D011, D018, D021, D022, D028 hazardous waste flammable liquid (acetone, xylene), and D002, D008, D009, D010, D011 hazardous waste corrosive liquid, acidic, inorganic (sulfuric acid, mercury), are routinely shipped to Republic Env Systems LLC (PAD085690592), and the most recent shipment was made on June 26, 2023.

Weekly Inspection Records:

The inspectors reviewed NCSU's available records of inspections of the WMF since the 2022 calendar year. The inspection log includes a checklist to record observations about leaking containers and for deterioration of containers caused by corrosion or other factors. The inspection log includes a checklist to record observations about aisle space, visible container labels, legible container labels, complete container labels, closed lids and bungs, condition of containers, container stacking, container storage time, housekeeping, emergency communication, fire extinguisher, spill response kit, etc. The records include the date and time of the inspection and the name, signature and initials of the employee conducting the inspection. Employees do routinely record inspection observations and subsequent follow-up actions on the inspection log.

13) Closing Conference

The inspectors conducted the exit meetings on July 11 and July 12 at 3:11pm and 12:32pm, respectively with Karen Trimberger, James Atkinson, Alex Fucci, and Aleks Kymalainen. During this meeting, the inspectors stated their preliminary conclusions of the inspection. On July 25 and July 28, 2023, Karen Trimberger provided photos of label replacements and unwanted material determinations, in an email to Mark Anthony Relon and Jenne Walker.

14) Summary of Observations

During the inspection, observations were made concerning the following RCRA requirements:

- **Pursuant to [15A NCAC 13A .0107(a)] [40 C.F.R. § 262.17(a)(5)(i)], which is a condition of the LQG Permit Exemption, a generator must mark or label its containers with the following: the words “Hazardous Waste”; an indication of the hazards of the contents; and the date upon which each period of accumulation begins clearly visible for inspection on each container.**
 - At the time of the inspection, the inspectors observed the following containers which were not labeled with the indication of the hazards of the contents:
 - one 2.5-foot by 2-foot container of lead and chloroform in Cell 214-O; and
 - one 35-gallon container of Barium and Selenium in Room 215.
- **Pursuant to HW Permit NCD000830737-R2, Part III- Storage in Containers, the Permittee shall comply with all conditions of this permit, relating to Room 209.**
 - At the time of the inspection, the inspectors observed the following containers (consisting of various chemicals such as Vanadium, Phosphorus Pentoxide, Sodium Hydrosulfide, and Bromine) which may potentially exceed storage in Room 209:
 - 11 5-gallon containers;
 - Five (5) one-foot square boxes; and
 - 15 containers of various sizes ranging from 100-milliliter to 500-milliliter bottles
- **Pursuant to [15A NCAC 13A .0118(c)] [40 C.F.R. § 279.22(d)], upon detection of a release of used oil to the environment, the facility must clean up and manage properly the released used oil and other materials.**
 - At the time of the inspection, the inspectors observed the following:
 - used oil spill in Room 820.

- Pursuant to 15A NCAC 13A .0107 (g) [40 C.F.R. § 262.206(a)(1)(i)], the following information must be affixed or attached to the container (i) the words “unwanted material” or another equally effective term that is to be used consistently by the eligible academic entity and that is identified in Part I of the Laboratory Management Plan.
 - At the time of the inspection, the inspectors observed the following containers which were not labeled with the words “unwanted material”:
 - one 4-liter container in Room 734; and
 - bin of containers for inventory check in Room 842.
- Pursuant to 15A NCAC 13A .0107 (g) [40 C.F.R. § 262.206(a)(2)], the following information may be affixed or attached to the container, but must at a minimum be associated with the container: (i) the date that the unwanted material first began accumulating in the container, and (ii) information sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste and to assign the proper hazardous waste code(s), pursuant to 40 C.F.R. § 262.11. Examples of information that would allow a trained professional to properly identify whether an unwanted material is a solid or hazardous waste include, but are not limited to: (A) The name and/or description of the chemical contents or composition of the unwanted material, or, if known, the product of the chemical reaction, (B) Whether the unwanted material has been used or is unused, and (C) A description of the manner in which the chemical was produced or processed, if applicable.
 - At the time of the inspection, the inspectors observed the following containers which were not labeled with the words “unwanted material,” an accumulation start date, and sufficient to allow a trained professional to properly identify whether an unwanted material is a solid and hazardous waste :
 - four (4) 5-gallon containers of unknown unwanted material and one 1-liter container of “Swern Ox Unwanted Material” in Room 830;
 - two (2) 1-liter containers of “Diethyl Ether” in Room 722;
 - two (2) 2.5-liter containers, one 4-liter container, one container with barium sulfate, one container with solid unwanted material, and one container with unknown contents in Room 708; and
 - bin of containers for inventory check in Room 842.

15) List of Attachments

Attachment 1 – Photo Log:

16) **Signed**

MARK ANTHONY RELON Digitally signed by MARK ANTHONY RELON
Date: 2023.09.26 13:24:40 -04'00'

Mark Anthony Relon
Environmental Engineer

17) **Concurrence**

BROOKE YORK Digitally signed by BROOKE YORK
Date: 2023.09.28 11:57:56 -04'00'

for Araceli B. Chavez
RCRA Enforcement Section

Attachment 1 – Photo Log

34 Photos taken on: July 11, 2023 to July 12, 2023

Photos taken by: Mark Anthony Relon

Photos taken with: Kodak PixPro Digital Camera

EPA Property Tag: SX9088

Appendix 1- NCSU Main Campus RCRA CEI Photographs

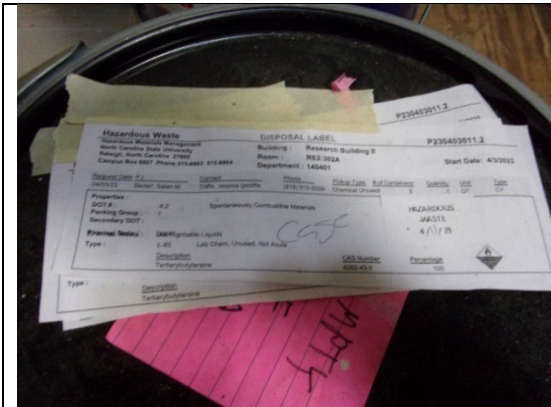


Figure 1: July 11, 2023, 9:24 AM WMF: Room 214-R Reactives
One 5-gallon container with hazardous waste label, accumulation start date, and indication of the hazards of the contents.



Figure 2: July 11, 2023, 9:24 AM WMF: Room 214-R Reactives
Two (2) 5-gallon containers with hazardous waste label, accumulation start date, and indication of the hazards of the contents.



Figure 3: July 11, 2023, 9:25 AM WMF: Room 214-R Reactives
Overall perspective of Room 214-R Reactives with universal waste lamps and flammable cage.



Figure 4: July 11, 2023, 9:33 AM WMF: Room 214-I Inorganic
Two (2) 15-gallon containers with hazardous waste label, accumulation start date, and indication of the hazards of the contents.



Figure 5: July 11, 2023, 9:34 AM WMF: Room 214-I Inorganic
Two (2) 1-foot by 1-foot containers with hazardous waste label, accumulation start date, and indication of the hazards of the contents.



Figure 6: July 11, 2023, 9:41 AM WMF: Room 214-I Inorganic
One 55-gallon, three 30-gallon, one 15-gallon, and two (2) 5-gallon lab packs with hazardous waste label, accumulation start date, and indication of the hazards of the contents.

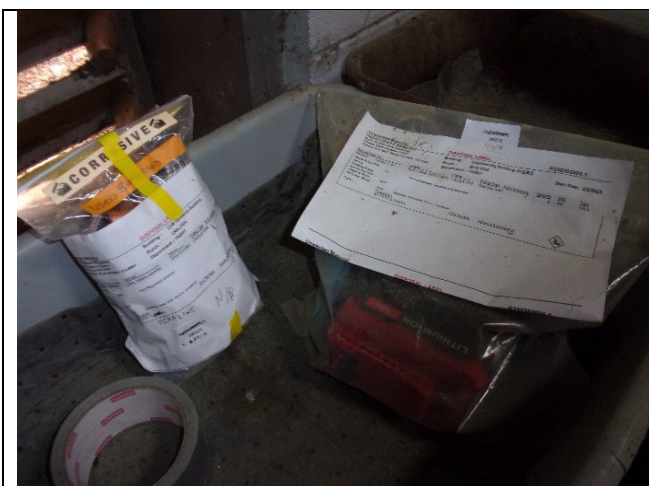


Figure 7: July 11, 2023, 9:45 AM WMF: Room 214-I Inorganic
One container of used batteries and one container of lithium-ion batteries with hazardous waste label, accumulation start date, and indication of the hazards of the contents.



Figure 8: July 11, 2023, 9:46 AM WMF: Room 214-I Inorganic
One 30-gallon container of "Lead for Recycle" DOT regulated material.



Figure 9: July 11, 2023, 9:47 AM WMF: Room 214-I Inorganic
One 30-gallon container with hazardous waste label, accumulation start date, and indication of the hazards of the contents.



Figure 10: July 11, 2023, 9:50 AM WMF: Room 214-O Organic
One 2.5-foot by 2-foot container with hazardous waste label, accumulation start date, and no proper indication of the hazards of the contents.

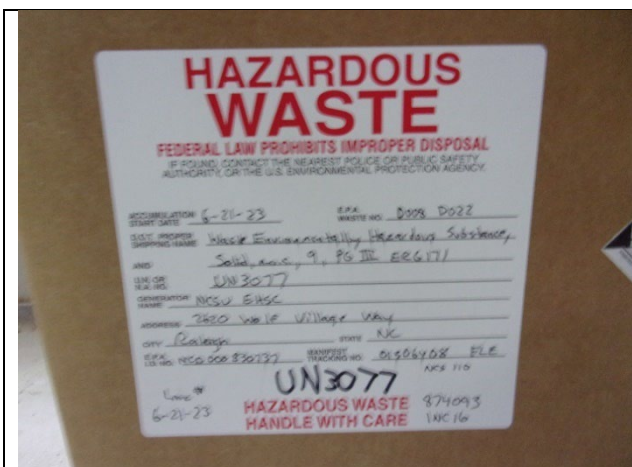


Figure 11: July 11, 2023, 9:50 AM WMF: Room 214-O Organic
One 2.5-foot by 2-foot container with hazardous waste label, accumulation start date, and no proper indication of the hazards of the contents.



Figure 12: July 11, 2023, 9:51 AM WMF: Room 214-O Organic
One 2.5-foot by 2-foot container with hazardous waste label, accumulation start date, and corrected indication of the hazards of the contents.



Figure 13: July 11, 2023, 10:06 AM WMF: Room 215
One 35-gallon container with hazardous waste label, accumulation start date, and no proper indication of the hazards of the contents.

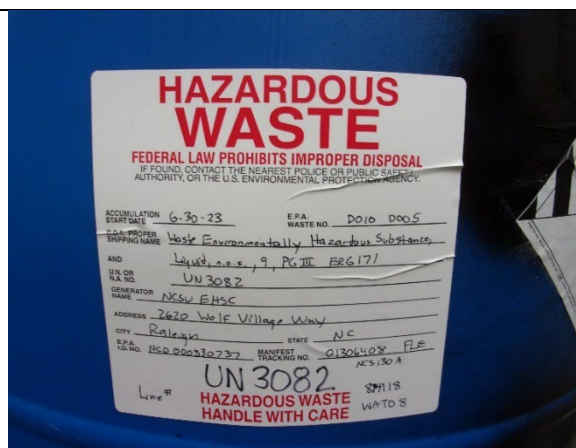


Figure 14: July 11, 2023, 10:06 AM WMF: Room 215
One 35-gallon container with hazardous waste label, accumulation start date, and no proper indication of the hazards of the contents.



Figure 15: July 11, 2023, 10:26 AM WMF: Room 209
Seven (7) containers under absorbent padding inside flammable cabinet.



Figure 16: July 11, 2023, 10:30 AM WMF: Room 209
11 5-gal containers, five (5) one-foot by one-foot boxes.



Figure 17: July 11, 2023, 10:30 AM WMF: Room 209
11 5-gal containers, five one-foot by one-foot boxes.



Figure 18: July 12, 2023, 8:59 AM Dabney Hall: Room 842
Fume hood with multiple containers unorganized and placed in a secondary containment bin.



Figure 19: July 12, 2023, 9:14 AM Dabney Hall: Room 847
Damaged secondary containment bin.



Figure 20: July 12, 2023, 9:21 AM Dabney Hall: Room 820
Used oil spill within their secondary containment bin.



Figure 21: July 12, 2023, 9:22 AM Dabney Hall: Room 820
Used oil spill within their secondary containment bin.



Figure 22: July 12, 2023, 9:22 AM Dabney Hall: Room 820
Used oil spill within their secondary containment bin.



Figure 23: July 12, 2023, 9:28 AM Dabney Hall: Room 830
Container labeled "Swern Ox Unwanted Material" in question.



Figure 24: July 12, 2023, 9:32 AM Dabney Hall: Room 830
Section labels for "Unwanted Organic Material."



Figure 25: July 12, 2023, 9:32 AM Dabney Hall: Room 830
Section labels for “Unwanted Solid Material” and “Unwanted Aqueous Material.”



Figure 26: July 12, 2023, 9:41 AM Dabney Hall: Room 734
Two (2) of three (3) 4-liter containers observed.

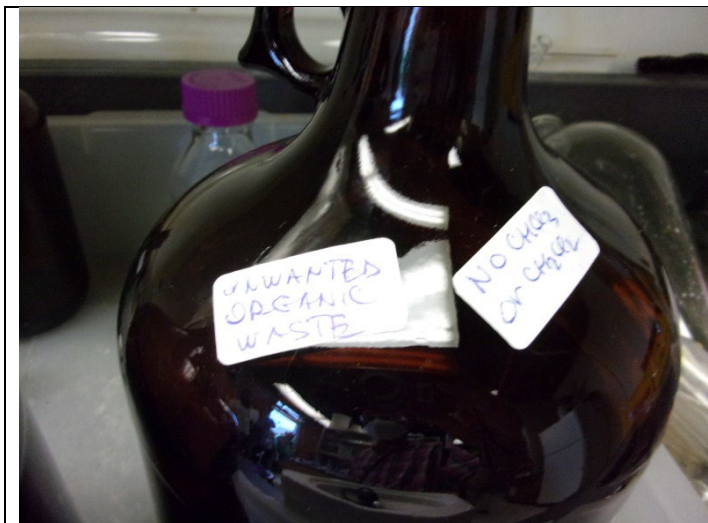


Figure 27: July 12, 2023, 9:41 AM Dabney Hall: Room 734
One of the three (3) 4-liter containers were labeled “Unwanted Organic Waste No CHCl_3 or CH_2Cl_2 ” (no halogens).

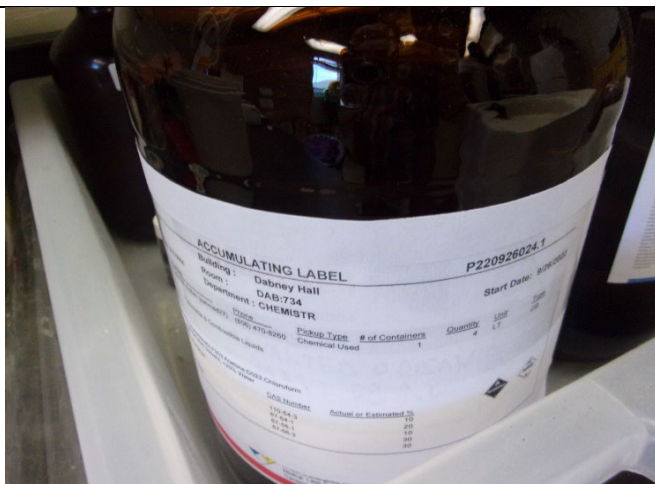


Figure 28: July 12, 2023, 9:42 AM Dabney Hall: Room 734
Label with accumulation start date, and indication of the hazards of the contents.

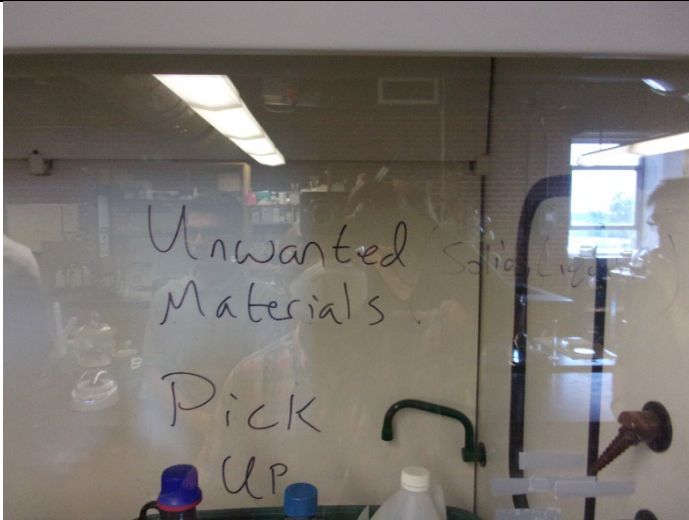


Figure 29: July 12, 2023, 9:52 AM Dabney Hall: Room 708 Fume hood with designated unwanted materials area.



Figure 30: July 12, 2023, 9:53 AM Dabney Hall: Room 708 Various unidentified containers in a secondary containment bin.



Figure 31: July 12, 2023, 10:04 AM Dabney Hall: Room 722
Two (2) 1-liter diethyl ether containers not having proper unwanted material labels.



Figure 32: July 12, 2023, 10:05 AM Dabney Hall: Room 722
Unwanted material containers, and a hazardous spill kit potentially blocking the back entrance of the laboratory.



Figure 33: July 12, 2023, 10:24 AM Dabney Hall: Room 440
Working container with stained secondary containment bin.

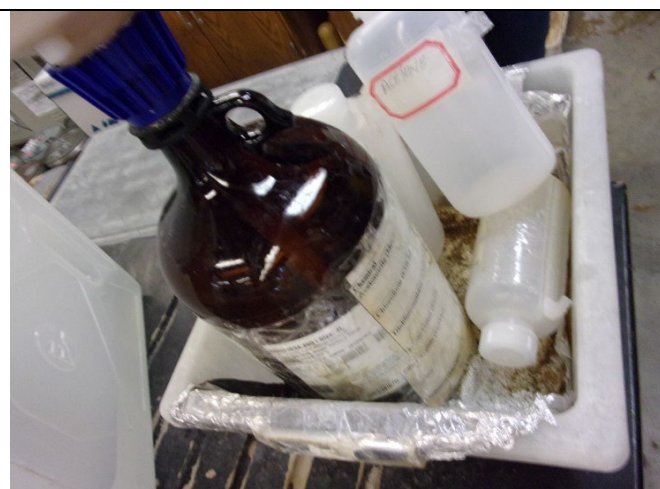


Figure 34: July 12, 2023, 10:25 AM Dabney Hall: Room 440
Working container with stained secondary containment bin.