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PART B - FACILITY DESCRIPTION

B-1 General Description

The University of North Carolina at Chapel Hill is a major multidisciplinary research University. The mission of the University is three-fold: education, research and public service. Enrollment is approximately 22,000 students with 8,000 faculty and staff, plus 5,000 part-time employees.

There has been a significant growth in research activities at the University in recent years following the construction of new laboratory buildings. There are approximately 1,875 laboratories on campus and more are in the construction and planning stages. The University is engaged in extensive biomedical research, ranking among the top 20 in funding from the National Institutes of Health. Although research is conducted by essentially all academic departments, the majority of hazardous wastes are generated by faculty who use hazardous materials in their research. Among the more active users of hazardous materials are the departments of Chemistry and Biology in the Academic Affairs division and the Health Affairs division's schools of Dentistry, Medicine, Pharmacy and Public Health.

The main campus consists of approximately 800 acres with nearly 300 buildings of various sizes. The majority of hazardous wastes are generated in about 30 of these buildings, however, these buildings are separated by public roads and thus do not constitute a single site according to RCRA (260.10). In addition, the University's Hazardous Materials Facility (HMF), the facility to which wastes collected from campus operations are moved for treatment, storage and packaging for shipment for off-site disposal, is located approximately two miles from the main campus. As a result, the University applied for and received the following EPA ID Numbers:

<u>FACILITY</u>	<u>EPA ID#</u>	<u>STATUS</u>
Hazardous Materials Facility	NCD982093783	Generator TSD (Interim)
Hydaru Scintillation Vial Storage Facility	NCD003203213	SQG TSD (Interim) Transporter
FLOB (Campus Zone 1)	NCD982114985	SQG
School of Pharmacy (Campus Zone 2)	NCD982114860	SQG

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School of Medicine (Campus Zone 3)	NCD982114928	\$00
Department of Chemistry (Campus Zone 4)	NCD980516308	\$00

All other campus "sites" meet the criteria of Conditionally Exempt Small Quantity Generators (CESQG).

The Chydaru facility is used for storage-for-decay of scintillation vials containing short-lived radionuclides. Many of the vials contain solvents meeting the criteria of EPA Hazardous Waste Numbers F003, F005, or D001. The University does not intend to submit a Part B Application for the Chydaru facility, but instead, plans to move the vial storage operation to the HMF facility.

An amendment to the Part A Application has been submitted to indicate the University's intention to construct an addition to the Hazardous Materials Facility under Interim status as provided for in 270.72. This proposed addition to the Hazardous Materials Facility is indicated on the site sketch in Appendix B-3 of this part.

The HMF constitutes a small portion of the tract of land on which the University's Scientific and General Storerooms, Physical Plant shops, Service (automobile) Station and Surplus Property Warehouse are located (See Appendix B-4). All of these "on-site" operations will be covered under the EPA Generator ID# NCD982099789, but the TSD operations will be confined to the HMF portion of the site. The majority of the wastes handled by the HMF facility are generated on the main campus, the off-site facilities listed above.

The HMF is located on the storeroom access road, off Estes Drive Extension, near the intersection of Estes Drive and Airport Road in Chapel Hill.

The on-site operations that generate hazardous waste include:
Physical Plant Paint Shop - paint stripping, spraying, and equipment cleaning.

Art Classroom Laboratory - ceramics, painting, sculpture, etc.

Scientific Storeroom - out-of-date reagents and surplus chemicals returned from laboratories.

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Surplus Property Warehouse - equipment components containing hazardous materials, e.g., mercury switches, drums of chemical products containing residuals in excess of those permitted in 261.7.

B-2 Topographic Map

Maps are contained in vinyl pockets that follow this page. Included in the Appendices are:

- APPENDIX B-1:** "HAZARDOUS WASTE FACILITY, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL, NORTH CAROLINA." This topographic map depicts contours, surface waters, surrounding land use, map orientation, wind rose and location of the Hazardous Materials Facility.
- APPENDIX B-2:** "UNC REAL ESTATE; 1966, HORACE WILLIAMS AIRPORT." Legal boundaries are shown.
- APPENDIX B-3:** "PROPOSED HAZARDOUS MATERIALS STORAGE BUILDING." Location of access control, flood control or drainage barriers, run-off control systems and other buildings.
- APPENDIX B-4:** "ACCESS AND INTERNAL ROADS" Roads in the immediate vicinity are included.
- APPENDIX B-5:** Flood Control/Sewage Information
- APPENDIX B-6:** Fire Station Locations
- APPENDIX B-7:** Flood Plain Information
- APPENDIX B-8:** Wind Rose Information
- APPENDIX B-9:** Road Load Bearing Capacity information

In reference to 40 CFR 270.14:

(b)(19)(ix) - There are currently no injection or withdrawal wells on or near the facility.

(b)(19)(x) - For sewage and flood control or drainage barriers, see Appendix B-5. Current flood control, drainage barriers, and runoff control system for the HMF consists of a drainage ditch one foot deep surrounding the front of the facility and a one (1)

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foot high earthen berm along the downgrade end of the facility. Water collected behind the berm resulting from precipitation will be fingerprint analyzed for hazardous waste contamination before released. This fingerprint analysis will include: pH; visual examination for turbidity, layering, unusual discoloration that may be the result of contamination; and odor. Any water suspected of being contaminated will be analyzed by a certified lab for contaminants.

(b)(19)(x) + Appendix B-6 indicates the locations of fire control facilities and all known SWMU's, such as Chydaru, HMF, Venable, North Carolina Memorial Hospital, Faculty Laboratory Office Building, and Beard Hall.

(b)(19)(iii) - Appendix B-7 contains the 100 Year flood Plain Map and certification that the HMF is not within the floodplain.

(b)(19)(v) - Appendix B-8 contains Wind Rose information. Although a chart specific to Chapel Hill is not available from the National Oceanic and Atmospheric Administration, a representative of the agency stated that the enclosed chart would be appropriate for the facility.

B-3 Location Information

Not Applicable

B-4 Traffic Information

Hazardous wastes are transported from the various campus generators to the HMF by pickup truck or by cargo van. The pickup truck is equipped with a custom-made canopy and a power-lift tailgate. The cargo van has a 17-foot enclosed cargo space and is equipped with a rollup door and power-lift tailgate. Both vehicles are equipped with placard holders and placards necessary to comply with DOT regulations.

The volumes transported during any one trip are small, generally two trips per day, 200 kilograms maximum. There are occasions when several drums of bulk-packed liquids might be moved at one time. The total quantity in any one shipment is limited so as not to exceed the Gross Vehicle Weight Rating (GVWR) for the pickup truck or for the cargo van.

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The most direct route between campus and HMF is used. No special traffic control is required. The roads over which the wastes are moved are maintained by the Town of Chapel Hill or the State of North Carolina. The access road between Estes Drive Extension and HMF, approximately 300 feet, is paved and serves as the entrance to the University's Central Warehouse. Approximately fifteen tractor-trailer trucks use this road daily, five days per week. The road has at least eight-inches of stone base with 2-inches of hot mix surface. The access road is maintained in good condition. Road access to the facility is shown in Appendix B-4, additional information and certification of road loadbearing capacity is shown in Appendix B-9.

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PART C - WASTE CHARACTERISTICS

This section provides a description of wastes handled at the UNC Hazardous Materials Facility, the sources of the wastes, methods of characterizing the wastes and the Waste Analysis Plan.

C-1 Chemical and Physical Analysis

General Description and Hazardous Characteristics: The majority of Hazardous Wastes to be processed at the University of North Carolina Hazardous Materials Facility are generated by off-site (campus) research, teaching and maintenance activities. These wastes consist of small quantities of a wide array of chemical species meeting the criteria of a hazardous waste. The largest volume waste streams meet the characteristics of ignitability (D001, F003, F005, corrosivity (D002), the nonspecific F002 (halogenated solvents) and the EP Toxicity series D004-D011. Although these are the larger volume waste streams, leftovers and unused chemicals, meeting the reactivity (D003) criteria and "P" and "U" listed wastes present unique and sometimes costly disposal problems.

It is the intent of the University to treat all wastes to the maximum degree practicable to reduce toxicity and hazardous characteristics. In addition the University intends to receive wastes from the NC Community College System and the NC Public School System which are classified as Conditionally Exempt Small Quantity Generators.

Basis for Hazard Designation: The initial analysis of waste begins in the research laboratories, teaching laboratories, shops and other facilities that use hazardous materials in their operations. The principal investigator (PI), shop supervisor, or other designated person familiar with the material, must complete a UNC Hazardous Material Transfer Form 510 (Appendix C-1) and forward it to the Health and Safety Office for review and scheduling of a pickup of the material.

Form 510 provides a check list to assist the generators in determining if a waste meets the criteria of a hazardous waste as defined by RCRA. The checklist includes criteria for ignitability, corrosivity, reactivity, EP toxicity and provides a space for listing of EPA Hazardous Waste Numbers for "U" and "P" listed wastes. Moreover, space is provided on Form 510 for listing of the principal constituents of the waste. Before submission to the Health and Safety Office, the Principal Investigator (PI), or designee, must sign and date

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the Form 510 certifying accuracy of the information provided about the waste.

Form 510 consists of three copies. The top copy is to be sent to the UNC Health and Safety Office for evaluation of DOT class and EPA codes. The self-sticking container label and attached carbon copy are to be affixed to the container to await transfer to the Hazardous Material Facility. Upon receipt of a Form 510 at the Health and Safety Office, the information on the label is reviewed by hazardous waste staff to determine if the hazard classification is correct and that sufficient information is available to determine that a means of disposal is available for the material. In the event that the information is insufficient, the necessary information is obtained by telephone or the label is returned to the department with a request for additional information. In the event that the information is sufficient for proper disposal, a copy of the Form 510 is maintained on file for three years with the manifest document used for pickup of the waste.

Form 510 is not required for leftovers and unused chemicals in their original containers if the label is legible. Form 510 is not required for radioactive mixed wastes since information on chemical constituents is listed on the Radioactive Waste Disposal Form, HSO Form 102 (Appendix C-2).

The EPA Hazardous Waste Number is determined from the review of the information provided on the Form 510, original container label, and by referring to various resource materials, such as, chemical dictionaries, Merck Index, manufacturer's catalogs and Material Safety Data Sheets.

C-1a Containers

The majority of hazardous wastes are transferred to HMF in four-liter glass reagent bottles. Exceptions include leftover and unused chemicals in their original containers, e.g., a metal can or a plastic bag contained within a cardboard carton and liquid scintillation media in 5-20 ml glass or plastic vials. Five-gallon Nalgene, polyethylene and steel containers are used for selected non-halogenated solvents. The wastes are stored in these containers until they are treated or packed for off-site disposal. Halogenated solvents are bulk-packed into DOT 17E/55-gallon drums treated with a phenolic coating; non-halogenated solvents into 17E/55-gallon polydrums; and, lab-packed items utilize DOT 17H/55-gallon drums.

Containers are generally not reused, except for those used for non-halogenated solvents. Compatibility is not a problem since the reuse is for wastes with the same characteristic.