I.D. NUMBER NCD000830737 DATE ISSUED _____
PERMIT NO. NCD000830737-R3

STATE OF NORTH CAROLINA
DIVISION OF WASTE MANAGEMENT
HAZARDOUS WASTE MANAGEMENT PERMIT

Operator: North Carolina State University
2620 Wolf Village Way
Raleigh, NC 27606

Owner: North Carolina State University
Campus Box 7201
Raleigh, NC 27695

Pursuant to N.C.G.S. 130A, Article 9 (Solid Waste Management Act as amended) and the 15A NCAC 13A North Carolina Hazardous Waste Management Rules, this operating permit is issued to the Owner and Operator, North Carolina State University, (hereafter, the "Permittee") for the North Carolina State University hazardous waste management facility located at 2620 Wolf Village Way in Raleigh, Wake, North Carolina in the Neuse River Basin at latitude 35.78565 and longitude -78.68272.

This permit, with all its attachments, constitutes the full Resource Conservation and Recovery Act (RCRA) Permit for this Facility. The Permittee must comply with all terms and conditions of this permit. This permit consists of the conditions discussed in Parts I, II, III, IV, V, VI, VII, VIII; the applicable regulations contained in 15A NCAC 13A including the applicable provisions of 40 CFR Parts 260 through 264, 266, 268, 270 and 124; statutory requirements of N.C.G.S. 130A, Article 9 (Solid Waste Management Act as amended) and the attached Application. Applicable regulations are those which are in effect on the date of issuance of this permit [40 CFR 270.32(c) as adopted in 15A NCAC 13A .0113] and are attached.

This permit is based on the assumption that the information submitted in the permit application and as modified by subsequent amendments (hereafter referred to as the Attachment) is complete and accurate and that the facility will be operated as specified in the Attachment. Any inaccuracies found in this information may be grounds for termination or modification of this permit in accordance with 40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0113 and/or grounds for potential enforcement action. The Permittee shall inform the North Carolina Department of Environmental Quality of any deviation from or changes in the information in the Attachment which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective as of _____, and shall remain in effect until_____, unless revoked and reissued, or terminated under 40 CFR 270.41 or 270.43 as adopted in 15A NCAC 13A .0113 or continued in accordance with 40 CFR 270.51 as adopted in 15A NCAC 13A .0113.

_____ _____
Heather Standish, Chief Date
Hazardous Waste Section

TABLE OF CONTENTS

PART I - STANDARD CONDITIONS

This permit is being issued to the Owner and Operator, North Carolina State University, (hereafter, the "Permittee") for the North Carolina State University Waste Management Facility (WMF) located at 2620 Wolf Village Way, Raleigh, North Carolina. Figure A-1 in Appendix D of this permit identifies the location of the WMF at the Environmental Health and Safety Center (EHSC). The topographic map in Appendix D indicates the location of the Environmental Health and Safety Center (EHSC) and boundaries of the Main Campus and adjacent University properties.
[40 CFR 270.10(b) as adopted in 15A NCAC 13A .0113]

A. EFFECT OF PERMIT

The Permittee is allowed to store hazardous waste in accordance with the conditions of this permit. Compliance with this permit constitutes compliance, for purposes of enforcement, with the N.C. Hazardous Waste Management Rules (15A NCAC 13A) and N.C.G.S. 130A, Article 9 (Solid Waste Management Act as amended). Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Compliance with the terms of this permit does not constitute a defense to any order issued or any action brought under any law governing protection of public health or the environment for any imminent and substantial endangerment to human health or the environment. In instances where the permit and the Attachment conflict, the permit takes precedence. Unless set forth specifically otherwise herein, requirements of this permit apply to all owners and operators of the Facility. Actions by any owner or operator to be compliant with this permit or that are non-compliant with this permit constitute an action of all owners and operators (except as otherwise specified).
[40 CFR 260.10 as adopted in 15A NCAC 13A .0102; 40 CFR 264.1(b) as adopted in 15A NCAC 13A .0109; 40 CFR 270.1(c), 270.4 270.10(b) and 270.30(g) as adopted in 15A NCAC 13A .0113]

B. PERMIT ACTIONS

1. This permit may be modified, revoked, and reissued, or terminated for cause in accordance with 40 CFR 270.41 and 270.43 as adopted in 15A NCAC 13A .0113. If at any time the Secretary of the Department of Environmental Quality or their designee (hereafter referred to as the Department) determines that cause for modification, revocation and reissuance, or termination of the permit exists under 40 CFR 270.41 or 270.43 as adopted in 15A NCAC 13A .0113, the Department may initiate a modification to the permit, revoke and reissue the permit, or terminate the permit in accordance with those sections. The initiation of a modification to the permit, revocation or reissuance of the permit, or termination of the permit does not stay the applicability or enforceability of any permit condition. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition.
   [40 CFR 124.5 as adopted in 15A NCAC 13A .0105; 40 CFR 270.4(a), 270.30(f), 270.41, and 270.43 as adopted in 15A NCAC 13A .0113]

2. The Permittee may request a modification of the permit at any time in accordance with 40 CFR 270.42 as adopted in 15A NCAC 13A .0113. The filing of a request for a permit modification or the notification of planned changes on the part of the Permittee does not stay

the applicability or enforceability of any permit condition. Modifications to the permit do not constitute a reissuance of the permit.
[40 CFR 124.5 as adopted in 15A NCAC 13A .0105; 40 CFR 270.4(a), 270.30(f), and 270.42 as adopted in 15A NCAC 13A .0113]

C. TRANSFER OF PERMITS

This permit is not transferable to any person, except after notice to the Department and approval as follows:

1. The Permittee shall inform the Department in writing and obtain prior written approval from the Department before transferring ownership or operational control of the Facility.
[40 CFR 270.30(l)(3) and 270.40 as adopted in 15A NCAC 13A .0113]

2. Before transferring ownership or operational control of the facility, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR Part 264 as adopted in 15A NCAC 13A .0109 and 40 CFR Part 270 as adopted in 15A NCAC 13A .0113 and this permit, including the corrective action obligations of 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and the financial assurance requirements of 40 CFR 270.40(b) as adopted in 15A NCAC 13A .0113.
[40 CFR 264.12(c) as adopted in 15A NCAC 13A .0109; 40 CFR 270.30(l)(3) and 270.40 as adopted in 15A NCAC 13A .0113]

3. The Permittee shall inform the new owner or operator that they must submit a revised permit application no later than 90 days prior to the scheduled change. The revised permit application shall include the disclosure statement specified in 15A NCAC 13A .0113(l) as required by the Department.
[40 CFR 270.40(b) as adopted in 15A NCAC 13A .0113; 15A NCAC 13A .0113(l)]

4. The Permittee shall inform the new owner or operator that they will be responsible for the requirements set forth in Condition I.C.2. A written agreement containing the specific date for transfer of the permit responsibility from the current Permittee to the new owner or operator shall be submitted to the Department with the revised permit application required by Condition I.C.3.
[40 CFR 264.12(c) as adopted in 15A NCAC 13A .0109; 40 CFR 270.40(b) as adopted in 15A NCAC 13A .0113]

5. In accordance with 40 CFR 270.40(a) as adopted in 15A NCAC 13A .0113, the permit must be transferred to the new owner or operator by modifying the permit to change the name of a Permittee and incorporate such other requirements as may be necessary following the permit modification procedures in 40 CFR 270.42 as adopted in 15A NCAC 13A .0113. Alternatively, the permit may be revoked and reissued in accordance with 40 CFR 270.41 as adopted in 15A NCAC 13A .0113.
[40 CFR 270.30(l)(3), 270.40, 270.41, and 270.42 as adopted in 15A NCAC 13A .0113]

6. When a transfer of ownership or operational control occurs, the Permittee shall comply with the requirements of 40 CFR Part 264, Subpart H (Financial Requirements), as adopted in

15A NCAC 13A .0109 until the new owner or operator has demonstrated that they are complying with the requirements of that subpart. The new owner or operator must demonstrate compliance with Subpart H requirements within six months of the date of the change of ownership or operational control of the facility. Upon demonstration to the Department by the new owner or operator of compliance with Subpart H, the Department shall notify the Permittee that they no longer need to comply with Subpart H as of the date of notification.
[40 CFR Part 264, Subpart H, as adopted in 15A NCAC 13A .0109; 40 CFR 270.40(b) as adopted in 15A NCAC 13A .0113]

D. SEVERABILITY

The provisions of this permit are severable. If any provision of this permit or the application of any provision of this permit to any circumstance is contested or held invalid, the contested or invalid provisions will not affect other permit conditions that are uncontested and valid, nor the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.
[40 CFR 124.16 as adopted in 15A NCAC 13A .0105]

E. DUTIES AND REQUIREMENTS

1. Duty to Comply. The Permittee shall comply with all conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued under 40 CFR 270.61 as adopted in 15A NCAC 13A .0113 or temporary authorization issued under 40 CFR 270.42(e) as adopted in 15A NCAC 13A .0113. Any permit noncompliance, other than noncompliance authorized by an emergency permit or temporary authorization, constitutes a violation of N. C. Hazardous Waste Management Rules (15A NCAC 13A) and N.C.G.S. 130A, Article 9 (Solid Waste Management Act as amended) and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application.
[40 CFR 270.30(a) as adopted in 15A NCAC 13A .0113]

2. Duty to Reapply. If the Permittee will continue an activity allowed or required by this permit after the expiration date of this permit, the Permittee shall submit a complete application for a new permit at least one year before this permit expires.
[40 CFR 270.30(b) and 40 CFR 270.51(d) as adopted in 15A NCAC 13A .0113]

3. Permit Expiration. This permit and all conditions herein will remain in effect beyond the permit's expiration date and until a decision is made concerning issuance of a new permit if the Permittee has submitted a timely, complete application at least one year before the expiration date of the permit (see 15A NCAC 13A .0113(b), (c), (d), and (e) as required) and through no fault of the Permittee, the Department has not issued a new permit as set forth in 40 CFR 124.15 as adopted in 15A NCAC 13A .0105.
[40 CFR 270.51(d) and 40 CFR 270.10(h)(1) as adopted in 15A NCAC 13A .0113]

4. Obligation for Corrective Action. Owners and operators of hazardous waste management units must have a permit during the active life of the unit and for any period necessary to comply with the corrective action requirements of this permit.

[40 CFR 264.101 as adopted in 15A NCAC 13A .0109; 40 CFR 270.1(c) and 270.51 as adopted in 15A NCAC 13A .0113]

5. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
[40 CFR 270.30(c) as adopted in 15A NCAC 13A .0113]

6. Duty to Mitigate. The Permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.
[40 CFR 270.30(d) as adopted in 15A NCAC 13A .0113]

7. Proper Operation and Maintenance. The Permittee shall, at all times, properly operate and maintain all facilities and systems of treatment, control, monitoring, and remediation (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facility or similar systems only when necessary to achieve compliance with the conditions of the permit.
[40 CFR 270.30(e) as adopted in 15A NCAC 13A .0113]

8. Duty to Provide Information. The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Department, upon request, copies of records required to be kept by this permit.
[40 CFR 264.74(a) as adopted in 15A NCAC 13A .0109 and 40 CFR 270.30(h) as adopted in 15A NCAC 13A .0113]

9. Inspection and Entry. The Permittee shall allow the Department or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:
   a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
   b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
   c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
   d. Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the N.C. Hazardous Waste Management Rules, any substances or parameters at any location.

   [40 CFR 270.30(i) as adopted in 15A NCAC 13A .0113]

10. Monitoring and Records.

a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample must be the appropriate method from Appendix I of 40 CFR Part 261 as adopted in 15A NCAC 13A .0106, the most recent edition of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, EPA Publication SW-846, or an approved equivalent method approved by the Department. The method used to obtain a sample of the waste is specified in Section C of the Attachment. Laboratory methods must be those specified in Section C of the Attachment.
[40 CFR 270.30(j)(1) as adopted in 15A NCAC 13A .0113]

b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this permit, the Waste Minimization certification required by Condition VI.A. of this permit, and records of all data used to complete the application for this permit for a period of at least three (3) years from the date of the sample, measurement, report, certification, application, or record. This period may be extended by request of the Department at any time and are automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee shall maintain records for all groundwater monitoring wells and associated groundwater surface elevations for the active life of the facility and the post-closure care period.
[40 CFR 264.74(b) as adopted in 15A NCAC 13A .0109 and 40 CFR 270.30(j)(2) as adopted in 15A NCAC 13A .0113]

c. Records of monitoring information shall include:
   i. The date, exact place, and time of sampling or measurements;
   ii. The individual(s) who performed the sampling or measurements;
   iii. The date(s) analyses were performed;
   iv. The individual(s) who performed the analyses;
   v. The analytical techniques or methods used; and
   vi. The results of such analyses.
[40 CFR 270.30(j)(3) as adopted in 15A NCAC 13A .0113]

11. Reporting Planned Changes. The Permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility, including alterations or additions which may impact any Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), Areas of Concern (AOCs), or the areas contaminated by them, including voluntary corrective measures to the SWMUs or AOCs listed in Appendix A of this permit.
[40 CFR 270.30(l)(1) as adopted in 15A NCAC 13A .0113]

12. Anticipated Noncompliance. The Permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
[40 CFR 270.30(l)(2) as adopted in 15A NCAC 13A .0113]

13. Compliance Schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) calendar days following each schedule date.
[40 CFR 270.30(l)(5) and 270.33 as adopted in 15A NCAC 13A .0113]

14. Twenty-four Hour Reporting.

    a. The Permittee shall report to the Department any noncompliance which may endanger health or the environment orally within 24 hours from the time the Permittee becomes aware of the circumstances, including:
        i. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.
        ii. Any information of a release or discharge of hazardous waste, or of a fire or explosion from the facility, which could threaten the environment or human health outside the facility.
    [40 CFR 270.30(l)(6)(i) as adopted in 15A NCAC 13A .0113]

    b. The description of the occurrence and its cause shall include:
        i. Name, address, and telephone number of the owner or operator;
        ii. Name, address, and telephone number of the facility;
        iii. Date, time, and type of incident;
        iv. Name and quantity of material(s) involved;
        v. The extent of injuries, if any;
        vi. An assessment of actual or potential hazard to the environment and human health outside the facility, where this is applicable; and
        vii. Estimated quantity and disposition of recovered material that resulted from the incident.
    [40 CFR 270.30(l)(6)(ii) as adopted in 15A NCAC 13A .0113]

    c. A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the periods of noncompliance (including exact dates and times), and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Permittee need not comply with the five-day written notice requirement if the Department waives that requirement, and the Permittee submits a written report within fifteen (15) days of the time the Permittee becomes aware of the circumstances.
    [40 CFR 270.30(l)(6)(iii) as adopted in 15A NCAC 13A .0113]

15. Other Noncompliance. The Permittee shall report all other instances of noncompliance not otherwise required to be reported at the time monitoring reports are submitted. The reports shall contain the information listed in Condition I.E.14.
[40 CFR 270.30(l)(10) as adopted in 15A NCAC 13A .0113]

16. Other Information. When the Permittee becomes aware that the Permittee failed to submit any relevant facts in the permit application or submitted incorrect information in the permit application or in any report to the Department, the Permittee shall promptly submit such facts or information.
[40 CFR 270.30(l)(11) as adopted in 15A NCAC 13A .0113]

F. SIGNATORY REQUIREMENTS

All reports or other information submitted to or requested by the Department shall be signed and certified according to 40 CFR 270.11 as adopted in 15A NCAC 13A .0113.
[40 CFR 270.11 and 270.30(k) as adopted in 15A NCAC 13A .0113]

G. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

The Permittee shall maintain the following documents and amendments, revisions and modifications to these documents at the facility, until closure and all RCRA corrective action is completed and certified by a qualified registered professional engineer. All amendments, revisions and modifications to the following documents shall be submitted to the Department for approval and/or permit modifications.

1. Waste analysis plan provided in Section C of the Attachment.
[40 CFR 264.13 as adopted in 15A NCAC 13A .0109]

2. Inspection schedules developed as specified in Part F of the Attachment.
[40 CFR 264.15(b) as adopted in 15A NCAC 13A .0109]

3. Personnel training documents and records as specified in Part H of the Attachment.
[40 CFR 264.16(d) as adopted in 15A NCAC 13A .0109]

4. Contingency plan provided in Section G of the Attachment.
[40 CFR 264.53(a) as adopted in 15A NCAC 13A .0109]

5. Closure plan provided in Section I of the Attachment.
[40 CFR 264.112(a) as adopted in 15A NCAC 13A .0109]

6. Operating record as required by 40 CFR 264.73 as adopted in 15A NCAC 13A .0109.
[40 CFR 264.73 as adopted in 15A NCAC 13A .0109]

H. BIENNIAL REPORT

The Permittee shall prepare and submit a biennial report by March 1 of each even numbered year in accordance with 40 CFR 264.75 as adopted in 15A NCAC 13A .0109 and instructions provided by the NC Hazardous Waste Section. The report must cover facility activities during the previous calendar year.
[40 CFR 264.75 as adopted in 15A NCAC 13A .0109 and
40 CFR 270.30(l)(9) as adopted in 15A NCAC 13A .0113]

I. MANIFEST SYSTEM

The Permittee shall comply with the manifest requirements of 40 CFR 264.71, 264.72, and 264.76 as adopted in 15A NCAC 13A .0109 and shall submit a Manifest Discrepancy Report or Unmanifested Waste Report in accordance with the manifest requirements and as specified in 40 CFR 270.30(l)(7&8) as adopted in 15A NCAC 13A .0113.
[40 CFR 264.70, 264.71, 264.72, and 264.76 as adopted in 15A NCAC 13A .0109 and 270.30(l)(7&8) as adopted in 15A NCAC 13A .0113]

J. DOCUMENTS TO BE SUBMITTED PRIOR TO OPERATION

For modifications to the facility, the Permittee may not treat, store, or dispose of hazardous waste in the new or modified portion of the facility, except as provided in 40 CFR 270.42 as adopted in 15A NCAC 13A .0113, until the Permittee has submitted to the Department certification that the facility has been constructed or modified in compliance with the permit requirements and the modified or newly constructed facility has been inspected by the Department.
[40 CFR 270.30 (l)(2) and 40 CFR 270.42 as adopted in 15A NCAC 13A .0113]

K. DEFINITIONS

For purposes of this permit, terms used herein shall have the same meaning as those in the North Carolina Hazardous Waste Management Rules and Solid Waste Management Law unless this permit specifically provides otherwise. Where terms are not defined in N.C.G.S. 130A, Article 9; 15A NCAC 13A; 40 CFR Parts 124, 260, 261, 264, 268, and 270 as adopted in 15A NCAC 13A; this permit; or United States Environmental Protection Agency guidance documents and publications, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

Corrective Action shall be defined as all activities including activities conducted beyond the facility boundary, that are proposed or implemented to facilitate assessment, monitoring, and active or passive remediation of releases of hazardous waste or hazardous constituents to soil, groundwater, surface water, sediment, or the atmosphere associated with Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), and/or Areas of Concern (AOCs) located at the facility or off-site, as required by 40 CFR 264.100 and 264.101 and adopted in 15A NCAC 13A .0109 or as otherwise required and specified by this permit.
[40 CFR 264.100 and 264.101 as adopted in 15A NCAC 13A .0109]

Sensitive land use includes residential housing, places of assembly, places of worship, schools, day care providers, and hospitals. Sensitive land use does not include retail businesses.
[N.C.G.S. 130A-295.01(f)]

L. CONFIDENTIAL INFORMATION

The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR 270.12 as adopted in 15A NCAC 13A .0113. If no claim is made at the time of submission, the information will be made available to the public without further notice.
[40 CFR 270.12 as adopted in 15A NCAC 13A .0113 and 15A NCAC 13A .0104(c)]

M. APPROVAL/DISAPPROVAL OF SUBMITTALS

The Department will review the workplans, reports, schedules, and other documents ("submittals") which require the Department's approval in accordance with the conditions of this permit. The Department will notify the Permittee in writing of any submittal that is disapproved, and the basis therefore. Condition I.N. shall apply only to submittals that have been disapproved and revised by the Department, or have been disapproved by the Department, then revised and resubmitted by the Permittee, and again disapproved by the Department.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

N. DISPUTE RESOLUTION

Notwithstanding any other provisions in this permit, in the event the Permittee disagrees, in whole or in part, with the Department's revision of a submittal or disapproval of any revised submittal required by the permit, the following may, at the Permittee's discretion, apply:

1. In the event that the Permittee chooses to invoke the provisions of this section, the Permittee shall notify the Department in writing within thirty (30) days of receipt of the Department's revision of a submittal or disapproval of a revised submittal. Such notice shall set forth the specific matters in dispute, the position the Permittee asserts should be adopted as consistent with the requirements of the permit, the basis for the Permittee's position, and any matters considered necessary for the Department's determination.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. The Department and the Permittee shall have an additional thirty (30) days from the Department's receipt of the notification provided for in Condition I.N.1. to meet or confer to resolve any disagreement.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

3. In the event an agreement is reached, the Permittee shall submit the revised submittal and implement the same in accordance with and within the time frame specified in such agreement.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

4. If agreement is not reached within the thirty (30) day period, the Department will notify the Permittee in writing of the decision on the dispute, and the Permittee shall comply with the terms and conditions of the Department's decision in the dispute. For the purposes of this provision in this permit, the responsibility for making this decision shall not be delegated below the Chief of the Hazardous Waste Section.

   Invoking any of the dispute resolution procedures of this section does not preclude the Permittee from exercising any other rights to petition for a contested case hearing or appeal in accordance with N.C. General Statute 150B. Nor does invoking any of the dispute resolution procedures of this section extend or delay the time periods in which the Permittee must exercise any of those other rights to petition or appeal.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

5. With the exception of those conditions under dispute, the Permittee shall proceed to take any action required by those portions of the submission and of the permit that the Department determines are not affected by the dispute.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

O. REPORT REQUIREMENTS

One (1) paper copy and one (1) electronic (PDF) copy of all reports, correspondence, notices, plans, and other submissions required by this permit shall be provided by the Permittee to the Department, unless the Department agrees to an alternate number of paper or electronic copies. All documents shall meet the signatory requirement in Condition I.F. and shall be submitted to the following address:

Hazardous Waste Section Chief
Division of Waste Management
1646 Mail Service Center
Raleigh, NC 27699-1646

[40 CFR 270.11 and 270.30(k) as adopted in 15A NCAC 13A .0113]

PART II - GENERAL FACILITY CONDITIONS

A. AUTHORIZED WASTE

The Permittees are authorized to store the following hazardous wastes or categories of hazardous waste in accordance with the conditions specified in this permit:

Wastes	***Waste Codes***	***Process Code****
Characteristic	D001 through D043	S01
Hazardous waste from non-specific sources	F001 through F005, F027, F039	S01
Discarded commercial chemical products, off-specification species, container residues, and spill residues classified as acute hazardous waste	P001 through P018, P020 through P024, P026 through P031, P033, P034, P036 through P051, P054, P056 through P060, P062 through P078, P081, P082, P084, P085, P087 through P089, P092 through P099, Pl01 through P106, P108 through P116, P118 through P123, P127, P128, P185, P188 through P192, P194, P196 through P199, P201 through P205	S01
Discarded commercial chemical products, off-specification species, container residues, and spill residues classified as toxic hazardous waste	U001 through U012, U014 through U039, U041 through U053, U055 through U064, U066 through U099, Ul01 through Ul03, Ul05 through Ul38, Ul40 through Ul74, Ul76 through Ul94, Ul96 through Ul97, U200 through U211, U213 through U223, U225 through U228, U234 through U240, U243, U244, U246 through U249, U271, U277 through U280, U328, U353, U359, U364 through U367, U372, U373, U375 through U379, U381 through U387, U389 through U396, U400 through U404, U407, U409, U410, U411	S01

*Process Code S01: container storage in units/rooms identified in Part III

[40 CFR 264.13 as adopted in 15A NCAC 13A .0109 and 40 CFR 270.13(j) as adopted in 15A NCAC 13A .0113]

B. DESIGN AND OPERATION OF FACILITY

The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil or surface water which could threaten human health or the environment.
[40 CFR 264.31 as adopted in 15A NCAC 13A .0109]

C. OFF-SITE WASTES

The Permittee is authorized to accumulate and store hazardous waste generated on the facility site and to receive and manage waste from the Main Campus and off-site locations under the control of North Carolina State University in accordance with the Attachment. The Permittee must immediately return all waste received from any other generator. All manifest issues shall be resolved as required by Condition I.I.
[40 CFR 264.12(b) and 264.72 as adopted in 15A NCAC 13A .0109]

D. GENERAL WASTE ANALYSIS

The Permittee shall follow the procedures described in the waste analysis plan as indicated in Section C of the Attachment. Results of these analyses and documentation of the waste chemicals managed shall be maintained as specified in 40 CFR 264.73(b)(3) as adopted in 15A NCAC 13A .0109 and as identified in Condition I.E.10. The Permittee shall verify the waste analysis as part of the quality assurance program. The quality assurance program will be in accordance with current EPA practices or equivalent methods approved by the Department, and at a minimum shall ensure that the Permittee maintains proper functional instruments, uses approved sampling and analytical methods, assures the validity of sampling and analytical procedures, and performs correct calculations.
[40 CFR 264.13 and 264.73(b)(3) as adopted in 15A NCAC 13A .0109]

E. SECURITY

The Permittee shall comply with the security provisions specified in 40 CFR 264.14 as adopted in 15A NCAC 13A .0109 and as described in Section F of the Attachment.
[40 CFR 264.14 as adopted in 15A NCAC 13A .0109]

F. GENERAL INSPECTION REQUIREMENTS

The Permittee shall comply with the general inspection requirements of 40 CFR 264.15 as adopted in 15A NCAC 13A .0109 and as described in Section F of the Attachment. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 40 CFR 264.15(c) as adopted in 15A NCAC 13A .0109. Records of inspections shall be kept as required by 40 CFR 264.15(d) as adopted in 15A NCAC 13A .0109.
[40 CFR 264.15 as adopted in 15A NCAC 13A .0109]

G. PERSONNEL TRAINING

The Permittee shall comply with the personnel training provisions of 40 CFR 264.16 as adopted in 15A NCAC 13A .0109. The training shall follow the outline and procedures as described in Section H of the Attachment.
[40 CFR 264.16 as adopted in 15A NCAC 13A .0109]

H. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE

The Permittee shall comply with the ignitable, reactive, and incompatible waste handling requirements of 40 CFR 264.17 as adopted in 15A NCAC 13A .0109 and as described in Section F of the Attachment.
[40 CFR 264.17 as adopted in 15A NCAC 13A .0109]

I. REQUIRED EQUIPMENT

The Permittee shall equip the facility and make readily available to operating personnel the necessary equipment to carry out the contingency plan, as described in Section G of the Attachment. At all times, the equipment requirement described in 40 CFR 264.32 as adopted in 15A NCAC 13A .0109 shall be met.
[40 CFR 264.32 as adopted in 15A NCAC 13A .0109]

J. TESTING AND MAINTENANCE OF EQUIPMENT

The Permittee shall test and maintain the equipment specified in the previous permit condition and as identified in Sections F and G of the Attachment as necessary to ensure its proper operation in time of emergency.
[40 CFR 264.33 as adopted in 15A NCAC 13A .0109]

K. ACCESS TO COMMUNICATIONS OR ALARM SYSTEM

The Permittee shall maintain access to the communications or alarm system as required by 40 CFR 264.34 as adopted in 15A NCAC 13A .0109.
[40 CFR 264.34 as adopted in 15A NCAC 13A .0109]

L. CONTINGENCY PLAN

1. Implementation of Plan. The Permittee shall immediately carry out the provisions of the contingency plan provided in Section G of the Attachment whenever there is a fire, explosion, or release of hazardous waste or constituents which threaten or could threaten human health or the environment.
[40 CFR 264.51 and 264.56 as adopted in 15A NCAC 13A .0109]

2. Copies of Plan. The Permittee shall comply with the requirements of 40 CFR 264.53 as adopted in 15A NCAC 13A .0109 and NC General Statute 130A-295(d) and (g).
[N.C.G.S. 130A-295(d) and (g); 40 CFR 264.53 as adopted in 15A NCAC 13A .0109]

3. Amendments to Plan. The Permittee shall review and immediately amend, if necessary, the contingency plan, in accordance with 40 CFR 264.54 as adopted in 15A NCAC 13A .0109

and shall provide documentation that the groups listed in 40 CFR 264.53(b) have received the revised copy of the contingency plan.
[40 CFR 264.53(b) and 264.54 as adopted in 15A NCAC 13A .0109]

4. Emergency Coordinator. The Permittee shall comply with the requirements of 40 CFR 264.55 as adopted in 15A NCAC 13A .0109, concerning the emergency coordinator.
[40 CFR 264.55 as adopted in 15A NCAC 13A .0109]

M. RECORD-KEEPING

The Permittee shall maintain a written operating record at the facility in accordance with the applicable requirements in 40 CFR 264.73 as adopted in 15A NCAC 13A .0109.
[40 CFR 264.73 as adopted in 15A NCAC 13A .0109]

N. CLOSURE

1. Performance Standard. The Permittee shall close the facility in accordance with the closure plan provided in Section I of the Attachment.
[40 CFR 264.111 and 264.112 as adopted in 15A NCAC 13A .0109]

2. Amendment to Closure Plan. The Permittee shall amend the closure plan in accordance with 40 CFR 264.112(c) as adopted in 15A NCAC 13A .0109 whenever necessary.
[40 CFR 264.112(c) as adopted in 15A NCAC 13A .0109]

3. Notification of Closure. The Permittee shall notify the Department in writing at least forty-five (45) days prior to the date the Permittee expects to begin closure of a permitted hazardous waste management unit or final closure of the facility.
[40 CFR 264.112(d) as adopted in 15A NCAC 13A .0109]

4. Time Allowed For Closure. Within ninety (90) days after receiving the final volume of hazardous waste at a hazardous waste management unit or facility, the Permittee shall treat or remove from the unit or facility all hazardous waste in accordance with the schedule specified in the closure plan. After receiving the final volume of hazardous waste, the Permittee shall complete closure activities in accordance with the schedule specified in the closure plan provided in Section I of the Attachment.
[40 CFR 264.113 as adopted in 15A NCAC 13A .0109]

5. Disposal or Decontamination of Equipment. The Permittee shall comply with the requirements of 40 CFR 264.114 as adopted in 15A NCAC 13A .0109.
[40 CFR 264.114 as adopted in 15A NCAC 13A .0109]

6. Certification of Closure. The Permittee shall submit to the Department a certification that the hazardous waste management unit or facility, as applicable, has been closed in accordance with the specifications in the closure plan provided in Section I of the Attachment.
[40 CFR 264.115 as adopted in 15A NCAC 13A .0109]

O. CORRECTIVE ACTION

The Permittee shall perform corrective action as required in 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 ~~and the approved remedy in Condition V.I [and V.M **(if a final remedy is selected)**] of this permit.~~
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

P. LOCAL GOVERNMENT INPUT FOR CONTINGENCY PLAN

1. Permit Renewal Requirements.

   a. At least 120 days prior to submitting an application for renewal of this permit, the Permittee shall provide to the county manager in which the facility is located, to any head of a municipality with planning jurisdiction over the site of the facility, and to all emergency response agencies that have a role under the contingency plan for the facility all of the following information:
      i. Information on the nature and type of operations to occur at the facility.
      ii. Identification of the properties of the hazardous waste to be managed at the facility.
      iii. A copy of the draft contingency plan for the facility that includes the proposed role for each local government and each emergency response agency that received information under this subsection.
      iv. Information on the hazardous waste locations within the facility.
      [N.C.G.S. 130A-295(d)]

   b. The Permittee shall request that within 60 days of receiving the information required in Condition II.P.1.a, each local government and emergency response agency that receives information under Condition II.P.1.a of this permit shall respond to the Permittee in writing as to the adequacy of the contingency plan and the availability and adequacy of its resources and equipment to respond to an emergency at the facility that results in a release of hazardous waste or hazardous waste constituents into the environment according to the role set forth for the local government or emergency response agency under the contingency plan.
      [N.C.G.S. 130A-295(e)]

   c. The Permittee shall include in the renewal application documentation that each local government and emergency response agency received the information required under Condition II.P.1.a of this permit, the written responses the Permittee received under Condition II.P.1.b of this permit, and verification by each that its resources and equipment are available and adequate to respond to an emergency at the facility in accordance with its role as set forth in the contingency plan. If the Permittee does not receive a timely verification from the local government or emergency response agency notified in Condition II.P.1.a, then the Permittee shall notify the Department and indicate the non-response in the application.
      [N.C.G.S. 130A-295(f)]

2. Ongoing Permit Requirements.

At each two-year interval after the permit is issued the Permittee shall verify that the resources and equipment of each local government and emergency response agency that have a role under the contingency plan for the facility are available and adequate to respond to an emergency at the facility in accordance with its role as set forth in the contingency plan. Documentation of the verification must be submitted on or before the anniversary date of the effective date of the permit. The contact for the local government shall be the county manager of the county in which the facility is located and the head of a municipality with planning jurisdiction over the site of the facility if one exists.
[N.C.G.S. 130A-295(g)]

W. SPECIAL CONDITIONS

1. The Permittee shall submit sampling analysis results no later than ninety (90) days after the sampling has been completed.
[40 CFR 270.30(l)(4) as adopted in 15A NCAC 13A .0113]

2. The Permittee shall provide electronic data deliverables (EDDs) for routine monitoring data collected, including, but not limited to, groundwater, surface water, soil, and vapor intrusion data, as requested by the Department. Electronic data deliverables shall be provided in addition to the report requirement specified in Condition I.O.
[40 CFR 270.30(l)(4) and 270.31(c) as adopted in 15A NCAC 13A .0113]

3. The Permittee must comply with 15A NCAC 02C .0108 – "Standards of Construction: Wells Other Than Water Supply" for all monitoring wells and recovery wells.
[15A NCAC 02C .0108]

PART III - STORAGE/TREATMENT IN CONTAINERS

The permittee uses rooms located inside the Waste Management Facility (WMF) building for bulking and storage of hazardous wastes, except for the Auxiliary Unit, which is located fifty feet west of the WMF. The concrete floors and containment trenches in the hazardous waste storage areas are protected with a chemical-resistant coating. The maximum total limit for hazardous waste storage is 6500 gallons.

All wastes, including ignitable and reactive wastes, are stored on shelves or skids, in pans, on pallets, or on the floor of the facility. Storage areas are shown on the floor plan figure in Appendix D of this permit.

The permittee shall ensure that the total volume or quantity of hazardous waste and other materials stored in each room does not exceed the maximum storage capacity stated below. In determining or calculating the volume stored, 100% of the container volume must be included in the calculation.

Room	Description	Largest Container Volume (Gallons)	Maximum Storage Capacity (Gallons)	Secondary Containment Capacity (Gallons)
206	Large storage room with six cells: one used for management of mixed wastes and five cells used for storage of hazardous, non-hazardous, and universal wastes.	55	2000	600
207	Hazardous and Non-Hazardous Waste Storage – including nonregulated pallets, drums and cubic yard boxes	55	200	135
208	Lab area with hood used for punching holes in nonregulated cylinders, misc.	55	120	135
209	Storage of water reactive waste, waste requiring refrigeration, some mercury and recyclable wastes. Room contains explosion-proof refrigerator, flammable storage cabinet, and shelving.	55	200	135
213	Entry area containing scales, packaging materials and supplies for staging shipments; hazardous and non-hazardous waste storage	55	330	225
214	Main storage room for management and storage of most incoming waste including organic and inorganic wastes, compressed gas cylinders, and universal waste. Location for most facility operations, lab packing and storage of bulk liquids.	Typically, 55-g drum Occasional 250-g tote	1600	1600
215	Storage and consolidation of bulk liquid. Fume hoods for consolidating liquid waste.	55	2000	800
Aux. Unit	Storage of explosives, class 4 oxidizers	5	15	20

For all rooms in the WMF, wastes may be stored on shelves, on the floor, on a pallet, on a skid or in pans.

Room 206 consists of six cells: one used for management of mixed wastes (low-level radioactive wastes that may also be characteristic or listed hazardous wastes), and the other five used for the storage of hazardous, non-hazardous, and universal wastes. The room provides separation of wastes and processes utilizing partition walls. Shelves with containment pans for waste storage and hoods for consolidation of liquid wastes in drums are located in the mixed waste cell. Each cell has a separate containment trench in the floor.

Room 207 is designated for hazardous and non-hazardous waste storage and has a containment sump in the floor.

Room 208 is designated for laboratory, small-scale recycling activities, and hazardous and non-hazardous waste storage. A containment sump is located in the floor.

Room 209 is designated for storage of water-reactive wastes, some mercury and recyclable wastes, and wastes requiring refrigeration. Waste storage units include an explosion-proof refrigerator, flammable materials cabinet for certain reactive materials, shelves with containment pans. Wastes may be stored on the floor, in the cabinet, in the refrigerator, on a pallet, on a skid, in pans, or on shelves. A containment sump is located in the floor.

Room 213 is an entry area containing scales, packaging materials and supplies, with hazardous and non-hazardous waste storage to the south of the main door. A containment trench is located in the floor.

Room 214 is the main waste management area, consisting of four cells, separated by partition walls, with containment trenches in each cell. The receiving area includes containment skids for universal waste storage and a cage for storing compressed gas cylinders. Two cells are designated for the storage and packaging/repackaging of chemical wastes. The cells have containment skids and shelves with containment pans. These two cells are designated as predominantly organic or inorganic wastes, with further segregation of chemical hazards achieved through physical separation. The fourth cell is designated primarily for packaged wastes, including labpacks, drummed (bulk) solids and liquids, and non-hazardous waste. In addition, the fourth cell may act as a temporary replacement for any other cell in room 209, 214, or 215.

Room 215 is designated for staging, accumulation, consolidation, and storage of liquids in containers ranging in size from 250 ml to 55 gallons. Drum Hoods are available for consolidation and designated for certain types of waste. A partition separates the flammable drum storage area from the organic and inorganic waste drums with containment trenches on either side. Containment skids and shelves provide separation for smaller containers staged for consolidation. As in all other rooms, wastes may be stored on shelves, on the floor, on a pallet, on a skid or in pans.

[40 CFR Part 264, Subpart I, as adopted in 15A NCAC 13A .0109 and 40 CFR 270.15 as adopted in 15A NCAC 13A .0113]

A. CONDITION OF CONTAINERS

If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects) or if it begins to leak, the Permittee shall transfer the hazardous waste from such container to a container that is in good condition or manage the waste in some other way that complies with the requirements of this permit.
[40 CFR 264.171 as adopted in 15A NCAC 13A .0109]

B. COMPATIBILITY OF WASTE WITH CONTAINERS

The Permittee must use a container made of or lined with materials which will not react with, and are otherwise compatible with, the hazardous waste to be stored and ensure that the ability of the container to contain the waste is not impaired.
[40 CFR 264.172 as adopted in 15A NCAC 13A .0109]

C. MANAGEMENT OF CONTAINERS

The Permittee shall manage containers as described in Section C and D of the Attachment. Containers holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste, and must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak. Stack heights are limited to approximately seven feet on pallets, and stacked containers will be shrink wrapped.

[40 CFR 264.173 as adopted in 15A NCAC 13A .0109]

D. INSPECTIONS

The Permittee shall inspect container storage areas at least weekly as described in Section F of the Attachment. The Permittee must look for leaking containers and for deterioration of containers and the containment system. Areas subject to spills, such as loading and unloading areas, must be inspected daily when in use.
[40 CFR 264.15(b)(4) and 264.174 as adopted in 15A NCAC 13A .0109]

E. AISLE SPACE

The Permittee shall maintain a minimum aisle space of two feet at all times.
[40 CFR 264.35 as adopted in 15A NCAC 13A .0109]

F. CONTAINMENT

The Permittee shall comply with the requirements of a containment system specified in 40 CFR 264.175 as adopted in 15A NCAC 13A .0109, including having a base which is free of cracks and gaps and is able to contain leaks, spills, and accumulated rainfall until such time that the material is detected and removed. The containment system must be designed for efficient drainage and have sufficient capacity to contain 10% of the total volume of containers. The Permittee shall maintain the containment system in accordance with Section D of the Attachment.
[40 CFR 264.175 as adopted in 15A NCAC 13A .0109]

G. SPECIAL REQUIREMENTS FOR IGNITABLE OR REACTIVE WASTE

The Permittee shall not locate containers holding ignitable or reactive waste within 200 feet of the University's property line.
[40 CFR 264.176 as adopted in 15A NCAC 13A .0109 and 15A NCAC 13A .0109(r)(2)(B)]

H. SPECIAL REQUIREMENTS FOR INCOMPATIBLE WASTE

1. The Permittee shall not place incompatible wastes in the same container.
   [40 CFR 264.177(a) as adopted in 15A NCAC 13A .0109]

2. The Permittee shall not place hazardous waste in an unwashed container that previously held an incompatible waste or material.
   [40 CFR 264.177(b) as adopted in 15A NCAC 13A .0109]

3. The Permittee shall not store a container of hazardous waste that is incompatible with any waste or material stored nearby in other containers, piles, open tanks or surface impoundments unless the container is separated from the other materials by a dike, berm, wall, or other device.
   [40 CFR 264.177(c) as adopted in 15A NCAC 13A .0109]

I. CLOSURE

The Permittee shall follow the closure plan as described in Section I of the Attachment and Condition II.N. of this permit.
[40 CFR Part 264, Subpart G, and 40 CFR 264.178 as adopted in 15A NCAC 13A .0109]

J. AIR EMISSION STANDARDS

The Permittee shall manage all hazardous waste placed in a container in accordance with the applicable requirements of 40 CFR Part 264, Subparts AA, BB, and CC as adopted in 15A NCAC 13A .0109 and as described in Section CC of the Attachment.
[40 CFR 264.179 as adopted in 15A NCAC 13A .0109]

PART IV - CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS (SWMUs) and AREAS OF CONCERN (AOCs)

The purpose of this section is to provide the facility direction to:

1) Perform a RCRA Facility Investigation to determine fully the nature and extent of any release of hazardous waste and/or hazardous constituents at or from the facility;
2) Perform a Corrective Measures Study to identify and evaluate alternatives for the corrective measures necessary to prevent, mitigate, and/or remediate any releases of hazardous wastes or hazardous constituents at or from the facility;
3) Implement the corrective measure or measures selected by the facility and approved by the State; and
4) Perform any other activities necessary to correct or evaluate actual or potential threats to human health and/or the environment resulting from the release or potential release of hazardous waste or hazardous constituents at or from the facility.

It is understood that some of the information that is required in this Section has either been submitted or is in process. Where a discrepancy exists between the RCRA Facility Assessment (RFA) report and this permit as to the future requirements to be taken at the facility, the permit requirements take precedence over the requirements reflected in the RFA report.
[RCRA Section 3005(c), codified at 42 U.S.C. § 6925(c); 40 CFR 264.101 as adopted in 15A NCAC 13A .0109; 40 CFR 270.32(b) as adopted in 15A NCAC 13A .0113]

A. APPLICABILITY

The Conditions of this Part apply to:

1. The solid waste management units (SWMUs) and areas of concern (AOCs) identified in Appendix A of the permit, which require a RCRA Facility Investigation (RFI). There are no SWMUs or AOCs which require an RFI at the time of permit issuance.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. The SWMUs and AOCs identified in Appendix A which require no further investigation at this time or are addressed under the permit.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

3. The SWMUs and AOCs identified in Appendix A, which require confirmatory sampling at the time of permit issuance. There are no SWMUs or AOCs which require confirmatory sampling at the time of permit issuance.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

4. Any additional SWMUs or AOCs discovered during the course of ground-water monitoring, field investigations, environmental audits, or other means.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

5. Contamination beyond the facility boundary, if necessary. The Permittee shall implement corrective actions beyond the facility boundary where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Department that,

despite the Permittee's best efforts, as determined by the Department, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be determined on a case-by-case basis. Assurances of financial responsibility for completion of such off-site corrective action will be required.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

B. DEFINITIONS

For purposes of this Part, the following definitions shall be applicable:

1. The term "area of concern" (AOC) includes any area having a probable release of a hazardous waste or hazardous constituent which is not from a solid waste management unit and is determined by the Department to pose a current or potential threat to human health or the environment. Such areas of concern may require investigations and remedial action as required under Section 3005(c)(3) of the Resource Conservation and Recovery Act (RCRA), codified at 42 U.S.C. § 6925(c), and 40 CFR 270.32 (b)(2) as adopted in 15A NCAC 13A .0113 in order to insure adequate protection of human health and the environment.
[RCRA Section 3005(c), codified at 42 U.S.C. § 6925(c); 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and 40 CFR 270.32(b) as adopted in 15A NCAC 13A .0113]

2. Corrective Action shall be defined as all activities including activities conducted beyond the facility boundary, that are proposed or implemented to facilitate assessment, monitoring, and active or passive remediation of releases of hazardous waste or hazardous constituents to soil, groundwater, surface water, sediment, or the atmosphere associated with Hazardous Waste Management Units (HWMUs), Solid Waste Management Units (SWMUs), and/or Areas of Concern (AOCs) located at the facility or off-site, as required by 40 CFR 264.100 and 264.101 and adopted in 15A NCAC 13A .0109 or as otherwise required and specified by this permit.
[40 CFR 264.100 and 264.101 as adopted in 15A NCAC 13A .0109]

3. A "Corrective Action Management Unit" (CAMU) includes any area within a facility that is designated by the Department under 40 CFR Part 264, Subpart S, for the purpose of implementing corrective action requirements under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and RCRA Section 3008(h), codified at 42 U.S.C. § 6928(h). A CAMU shall only be used for the management of remediation waste pursuant to implementing such corrective action requirements at the facility.
[RCRA Section 3008(h), codified at 42 U.S.C. § 6928(h), and 40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

4. "Corrective measures" include all corrective action necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any area of concern or solid waste management unit at the facility, regardless of the time at which waste was placed in the unit, as required under 40 CFR 264.101 as adopted by 15A NCAC 13A .0109. Corrective measures may address releases to air, soils, surface water or ground water.

[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

5. "Extent of contamination" is defined as the horizontal and vertical area in which the concentrations of the hazardous constituents in the environmental media are above detection limits or background concentrations indicative of the region, whichever is appropriate as determined by the Department.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

6. "Facility" includes all contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g. one or more landfills, surface impoundments, or combination of them). For the purposes of implementing corrective action under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109, a facility includes all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA, 42 U.S.C. § 6921 *et seq*.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

7. A "hazardous constituent" for the purposes of this Part are those substances listed in 40 CFR Part 261, Appendix VIII, as adopted in 15A NCAC 13A .0106 or 40 CFR Part 264, Appendix IX, as adopted in 15A NCAC 13A .0109.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

8. "Interim Measures" are actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

9. The term "land disposal" means placement in or on the land except for a CAMU or staging pile and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, salt bed formation, underground mine or cave, or concrete vault or bunker intended for disposal purposes.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

10. "Landfill" includes any disposal facility or part of a facility where waste is placed in or on the land and which is not a pile, a land treatment facility, a surface impoundment, an underground injection well, a salt dome formation, a salt bed formation, an underground mine, a cave, or a corrective action management unit.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

11. A "release" for purposes of this Part includes any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituents.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

12. "Remediation waste" includes all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediment) and debris, which contain listed hazardous

wastes or which themselves exhibit a hazardous waste characteristic, that are managed for the purpose of implementing corrective action requirements under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and RCRA Section 3008(h), codified at 42 U.S.C. § 6928(h). For a given facility, remediation wastes may originate only from within the facility boundary, but may include waste managed in implementing RCRA Sections 3004(v), codified at 42 U.S.C. § 6924(v), or 3008(h), codified at 42 U.S.C. § 6928(h), for releases beyond the facility boundary.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

13. The term "solid waste" means any garbage, refuse, sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including solid, liquid, semi-solid, or contained gaseous material resulting from industrial, commercial, mining and agricultural operations, and from community activities, but does not include solid or dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows or industrial discharges that are point sources subject to permits under Section 402 of the Federal Water Pollution Control Act, as amended (86 Stat. 880), or source, special nuclear, or by-product material as defined by the Atomic Energy Act of 1954, as amended (68 Stat. 923).
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

14. A "solid waste management unit" (SWMU) for the purposes of this Part includes any unit which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for management of solid waste. RCRA regulated hazardous waste management units are also solid waste management units. Solid Waste Management Units include areas which have become contaminated by routine and systematic releases of hazardous waste or hazardous constituents, excluding one-time accidental spills that are immediately remediated and cannot be linked to solid waste management activities (e.g., product or process spills).
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

15. A "Temporary Unit" (TU) includes any temporary tanks and/or container storage areas used solely for treatment or storage of hazardous remediation wastes during specific remediation activities. Designated by the Department, such units must conform to specific standards, and may only be in operation for a period of time as specified in this permit.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

16. A "unit" for the purposes of this Part includes, but is not limited to, any landfill, surface impoundment, waste pile, land treatment unit, incinerator, injection well, tank, container storage area, septic tank, drain field, wastewater treatment unit, elementary neutralization unit, transfer station, or recycling unit.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

C. NOTIFICATION AND ASSESSMENT REQUIREMENTS FOR NEWLY IDENTIFIED SWMUs AND AOCs

1. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any Areas of Concern (AOCs) as discovered under Condition IV.A.4. The

notification shall include, at a minimum, the location of the AOC and all available information pertaining to the nature of the release (e.g., media affected, hazardous constituents released, magnitude of release, etc.). If the Department determines that further investigation of an AOC is required, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition IV.E.1. or Condition IV.F.1.b.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. The Permittee shall notify the Department in writing, within fifteen (15) calendar days of discovery, of any additional SWMUs as discovered under Condition IV.A.4. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification, a SWMU Assessment Report (SAR) for each SWMU identified. At a minimum, the SAR shall provide the following information:
   a. Location of unit(s) on a topographic map of appropriate scale.
   b. Designation of type and function of unit(s).
   c. General dimensions, capacities and structural description of unit(s) (supply any available plans/drawings).
   d. Dates that the unit(s) was operated.
   e. Specification of all wastes that have been managed at/in the unit(s) to the extent available. Include any available data on hazardous constituents in the waste.
   f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include ground-water data, soil analyses, air, and/or surface water data).

   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and 40 CFR 270.14(d) as adopted in 15A NCAC 13A .0113]

3. Based on the data in the SAR, the Department shall determine the need for further investigations at the SWMUs covered in the SAR. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Conditions IV.E.1. or IV.F.1.b.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

D. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT PREVIOUSLY IDENTIFIED SWMUs AND AOCs

1. The Permittee shall notify the Department in writing of any newly discovered release(s) of hazardous waste or hazardous constituents discovered during the course of ground-water monitoring, field investigations, environmental audits, or other means, within fifteen (15) calendar days of discovery. Such newly discovered releases may be from SWMUs or AOCs identified in Condition IV.A.2. or SWMUs or AOCs identified in Condition IV.A.3.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. If the Department determines that further investigation of the SWMUs or AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition IV.F.1.b.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

E. CONFIRMATORY SAMPLING (CS)

1. The Permittee shall prepare and submit to the Department a Confirmatory Sampling (CS) Workplan within forty-five (45) calendar days of the effective date of this permit for SWMUs and AOCs identified in Condition IV.A.3. and within forty-five (45) calendar days of notification by the Department for a newly identified SWMU or AOC as required by Conditions IV.C.1. and IV.C.3. The CS Workplan shall include schedules of implementation and completion of specific actions necessary to determine whether or not a release has occurred from the SWMUs and AOCs. It should also address applicable requirements and affected media.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. The CS Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the CS Workplan schedule in the letter approving the CS Workplan. If the Department disapproves the CS Workplan, the Department shall either (1) notify the Permittee in writing of the CS Workplan's deficiencies and specify a due date for submission of a revised CS Workplan, or (2) revise the CS Workplan and notify the Permittee of the revisions, or (3) conditionally approve the CS workplan and notify the Permittee of the conditions. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Workplan.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

3. The Permittee shall prepare and submit to the Department a Confirmatory Sampling Report identifying those SWMUs and AOCs that have released hazardous waste or hazardous constituents into the environment in accordance with the schedule in the approved CS Workplan. The CS Report shall include all data, including raw data, and a summary and analysis of the data that supports the above determination.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

4. Based on the results of the CS Report, the Department shall determine the need for further investigations at the SWMUs and AOCs covered in the CS Report. If the Department determines that such investigations are needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition IV.F.1.b. The Department will notify the Permittee of any "no further action" decision.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

F. RCRA FACILITY INVESTIGATION (RFI)

1. RFI Workplan(s)

a. At the time of issuance of this permit, there are no SWMUs or AOCs identified that require further investigation as indicated in Condition IV.A.1. and Appendix A.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of notification by the Department, an RFI Workplan for those units identified under Condition IV.C.1, Condition IV.C.3., Condition IV.D.2., or Condition IV.E.4.

This RFI Workplan(s) shall be developed to meet the requirements of Condition IV.F.1.c.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

c. The RFI Workplan(s) shall meet the requirements of Appendix B at a minimum. The Workplan(s) shall include schedules of implementation and completion of specific actions necessary to determine the nature and extent of releases and the potential pathways of contaminant releases to the air, land, surface water, and ground water. The Permittee must provide sufficient justification and/or documentation that a release is not probable if a unit or a media/pathway associated with a unit (ground water, surface water, soil, subsurface gas, or air) is not included in the RFI Workplan(s). Such deletions of a unit, media or pathway from the RFI(s) are subject to the approval of the Department. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix B. Such omissions or deviations are subject to the approval of the Department. The RFI Workplan may be phased to allow for subsequent investigatory activity to be contingent upon the initial phase findings. If the scope of the Workplan(s) is designed to be an initial phase, the initial phase must summarize all potential final phase activities needed to meet the requirements of this condition. In addition, the scope of the RFI Workplan(s) shall include all investigations necessary to ensure compliance with 40 CFR 264.101(c) as adopted in 15A NCAC 13A .0109.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

d. The RFI Workplan(s) must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the RFI Workplan schedule in the letter approving the RFI Workplan(s). If the Department disapproves the RFI Workplan(s), the Department shall either (1) notify the Permittee in writing of the RFI Workplan's deficiencies and specify a due date for submission of a revised RFI Workplan, or (2) revise the RFI Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved RFI Workplan, or (3) conditionally approve the RFI workplan and notify the Permittee of the conditions.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Workplan(s) and Appendix B. The Permittee shall notify the Department twenty (20) days prior to any sampling activity.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

3. RFI Reports

a. If the time required to conduct the RFI(s) is greater than one hundred eighty (180) calendar days, the Permittee shall provide the Department with quarterly RFI Progress Reports (90-day intervals) beginning ninety (90) calendar days from the start date specified by the Department in the RFI Workplan approval letter. The Progress Reports shall contain the following information at a minimum:

i. A description of the portion of the RFI completed;
ii. Summaries of findings;
iii. Summaries of any deviations from the approved RFI Workplan during the reporting period;
iv. Summaries of any significant contacts with local community public interest groups or state government;
v. Summaries of any problems or potential problems encountered during the reporting period;
vi. Actions taken to rectify problems;
vii. Changes to relevant personnel;
viii. Projected work for the next reporting period; and
ix. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

b. The Permittee shall prepare and submit to the Department Draft and Final RCRA Facility Investigation Report(s) for the investigations conducted pursuant to the Workplan(s) submitted under Condition IV.F.1. The Draft RFI Report(s) shall be submitted to the Department for review in accordance with the schedule in the approved RFI Workplan(s). The Final RFI Report(s) shall be submitted to the Department within thirty (30) calendar days of receipt of the Department's comments on the Draft RFI Report. The RFI Report(s) shall include an analysis and summary of all required investigations of SWMUs and AOCs and their results. The summary shall describe the type and extent of contamination at the facility, including sources and migration pathways, and a description of actual or potential receptors. The Report(s) shall also describe the extent of contamination (qualitative/ quantitative) in relation to background levels indicative of the area. If the Draft RFI Report is a summary of the initial phase investigatory work, the report shall include a workplan for the final phase investigatory actions required based on the initial findings. Approval of the final phase workplan shall be carried out in accordance with Condition IV.F.1.d. The objective of this task shall be to ensure that the investigation data are sufficient in quality (e.g., quality assurance procedures have been followed) and quantity to describe the nature and extent of contamination, potential threat to human health and/or the environment, and to support a Corrective Measures Study, if necessary.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

c. The Department will review the Final RFI Report(s) and notify the Permittee of the need for further investigative action and/or the need for a Corrective Measures Study to meet the requirements of Condition IV.H., Appendix C and 40 CFR 264.101 as adopted in 15A NCAC 13A .0109. The Department will notify the Permittee of any "no further action" decision. Any further investigative action required by the Department shall be prepared and submitted in accordance with a schedule specified by the Department and approved in accordance with Condition IV.F.1.d.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

G. INTERIM MEASURES (IM)

1. IM Workplan

a. Upon notification by the Department, the Permittee shall prepare and submit an Interim Measures (IM) Workplan for any SWMU or AOC which the Department determines is necessary. IM are necessary in order to minimize or prevent the further migration of contaminants and limit human and environmental exposure to contaminants while long-term corrective action remedies are evaluated and, if necessary, implemented. The IM Workplan shall be submitted within thirty (30) calendar days of such notification and shall include the elements listed in Condition IV.G.1.b. Such interim measures may be conducted concurrently with investigations required under the terms of this permit. The Permittee may initiate IM by submitting an IM Workplan for approval and reporting in accordance with the requirements in Condition IV.G.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

b. The IM Workplan shall ensure that the interim measures are designed to mitigate any current or potential threat(s) to human health or the environment and to be consistent with and integrated into any long-term solution at the facility. The IM Workplan shall include: the interim measures objectives, procedures for implementation (including any designs, plans, or specifications), and schedules for implementation.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

c. The IM Workplan must be approved by the Department, in writing, prior to implementation. The Department shall specify the start date of the IM Workplan schedule in the letter approving the IM Workplan. If the Department disapproves the IM Workplan, the Department shall either (1) notify the Permittee in writing of the IM Workplan's deficiencies and specify a due date for submission of a revised IM Workplan, or (2) revise the IM Workplan and notify the Permittee of the revisions and the start date of the schedule within the approved IM Workplan, or (3) conditionally approve the IM Workplan and notify the Permittee of the conditions.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. IM Implementation

a. The Permittee shall implement the interim measures in accordance with the approved IM Workplan.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

b. The Permittee shall give notice to the Department as soon as possible of any planned changes, reductions, or additions to the IM Workplan.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

c. Final approval of corrective action required under 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 which is achieved through interim measures shall be in accordance with 40 CFR 270.41 as adopted in 15A NCAC 13A .0113 and Condition IV.I. as a permit modification.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109 and 40 CFR 270.41 as adopted in 15A NCAC 13A .0113]

3. IM Reports

a. If the time required for completion of interim measures is greater than one (1) year, the Permittee shall provide the Department with progress reports at intervals specified in the approved workplan. The Progress Reports shall contain the following information at a minimum:
   i. A description of the portion of the interim measures completed;
   ii. Summaries of any deviations from the IM Workplan during the reporting period;
   iii. Summaries of any problems or potential problems encountered during the reporting period;
   iv. Projected work for the next reporting period; and
   v. Copies of laboratory/monitoring data.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of completion of interim measures conducted under Condition IV.G., an IM Report. The IM Report shall contain the following information at a minimum:
   i. A description of interim measures implemented:
   ii. Summaries of results;
   iii. Summaries of any problems encountered;
   iv. Summaries of accomplishments and/or effectiveness of interim measures; and
   v. Copies of all relevant laboratory/monitoring data, etc. in accordance with Condition I.E.10.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

H. CORRECTIVE MEASURES STUDY

1. Corrective Measures Study (CMS) Workplan

a. The Permittee shall prepare and submit a CMS Workplan for those units requiring a CMS within ninety (90) calendar days of notification by the Department that a CMS is required. This CMS Workplan shall be developed to meet the requirements of Condition IV.H.1.b.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

b. The CMS Workplan shall meet the requirements of Appendix C at a minimum. The CMS Workplan shall include schedules of implementation and completion of specific actions necessary to complete a CMS. The Permittee must provide sufficient justification and/or documentation for any unit identified in accordance with Condition IV.H.1.a. which is deleted from the CMS Workplan. Such deletion of a unit is subject to the approval of the Department. The CMS shall be conducted in accordance with the approved CMS Workplan. The Permittee shall provide sufficient written justification for any omissions or deviations from the minimum requirements of Appendix C. Such omissions or deviations are subject to the approval of the Department. The scope of the CMS Workplan shall include all investigations necessary to ensure compliance with RCRA Section 3005(c), codified at 42 U.S.C. § 6925(c), 40 CFR 264.101 and 40 CFR 264.552 as adopted in 15A NCAC 13A .0109, and 270.32(b) as adopted in 15A NCAC 13A .0113. The Permittee shall implement corrective actions beyond the facility boundary, as set forth in Condition IV.A.5.

[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

c. The Department shall either approve or disapprove, in writing, the CMS plan. If the Department disapproves the CMS Workplan, the Department shall either (1) notify the Permittee in writing of the CMS Workplan's deficiencies and specify a due date for submittal of a revised CMS Workplan, or (2) revise the CMS Workplan and notify the Permittee of the revisions, or (3) conditionally approve the CMS Workplan and notify the Permittee of the conditions. This modified CMS Workplan becomes the approved CMS Workplan.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. Corrective Measures Study Implementation

The Permittee shall begin to implement the Corrective Measures Study according to the schedules specified in the CMS Workplan, no later than fifteen (15) calendar days after written approval from the Department for the CMS Workplan. The CMS shall be conducted in accordance with the approved CMS Workplan approved in accordance with Condition IV.H.1.c.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

3. CMS Report

a. The Permittee shall prepare and submit to the Department a draft and final CMS Report for the study conducted pursuant to the approved CMS Workplan. The draft CMS Report shall be submitted to the Department in accordance with the schedule in the approved CMS Workplan. The final CMS Report shall be submitted to the Department within thirty (30) calendar days of receipt of the Department's comments on the draft CMS Report. The CMS Report shall summarize any bench-scale or pilot tests conducted. The CMS Report must include an evaluation of each remedial alternative. If a remedial alternative requires the use of a CAMU, the CMS report shall include all information necessary to establish and implement the CAMU. The CMS Report shall present all information gathered under the approved CMS Workplan. The CMS Final Report must contain adequate information to support the Department's decision on the recommended remedy, described under Condition IV.I.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

b. If the Department determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition IV.H.3.a., the Department may disapprove the CMS Final Report. If the Department disapproves the CMS Final Report, the Department shall notify the Permittee in writing of deficiencies in the CMS Final Report and specify a due date for submittal of a revised CMS Final Report. The Department will notify the Permittee of any no further action decision.
[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

c. As specified under Condition IV.H.3.a., based on preliminary results and the CMS Final Report, the Department may require the Permittee to evaluate additional remedies or particular elements of one or more proposed remedies.

[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

I. REMEDY APPROVAL AND PERMIT MODIFICATION

1. A remedy shall be selected by the Permittee in coordination with the Department from the remedial alternatives evaluated in the CMS. The remedy will be based at a minimum on protection of human health and the environment, as per specific site conditions, existing regulations, and guidance.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. Pursuant to 40 CFR 270.41 as adopted in 15A NCAC 13A .0113, a permit modification will be initiated by the Department upon concurrence of a remedy selected in accordance with Condition IV.I.1. This modification will serve to incorporate a final remedy into the permit.
   [40 CFR 270.41 as adopted in 15A NCAC 13A .0113]

3. Within 120 calendar days after the modified permit is issued, the Permittee shall demonstrate financial assurance for completing the approved remedy.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

J. MODIFICATION OF THE CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

1. If at any time the Department determines that modification of the Corrective Action Schedule of Compliance is necessary, the Department may initiate a modification to the Schedule of Compliance in Appendix E.
   [40 CFR 270.41 as adopted in 15A NCAC 13A .0113]

2. Modifications that are initiated and finalized by the Department will be in accordance with the applicable provisions of 40 CFR 270.41 as adopted in 15A NCAC 13A .0113. The Permittee may also request a permit modification in accordance with 40 CFR 270.42 as adopted in 15A NCAC 13A .0113.
   [40 CFR 270.41 and 270.42 as adopted in 15A NCAC 13A .0113]

K. IMMINENT HAZARDS

1. The Permittee shall report to the Department any imminent or existing hazard to public health or the environment from any release of hazardous waste or hazardous constituents. Such information shall be reported orally within 24 hours from such time the Permittee becomes aware of the circumstances. This report shall include the information specified under Condition I.E.14.
   [40 CFR 264.56 as adopted in 15A NCAC 13A .0109]

2. A written report shall also be provided to the Department within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. The written report shall contain the information specified under Condition I.E.14. and a description of the release and its cause; the period of the release; whether the release has been stopped; and if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the release.

[40 CFR 264.56 as adopted in 15A NCAC 13A .0109]

L. WORKPLAN AND REPORT REQUIREMENTS

1. All plans and schedules shall be subject to approval by the Department prior to implementation to assure that such workplans and schedules are consistent with the requirements of this permit and with applicable regulations and guidance. Any approved schedule of implementation contained in any work plan, addendum, or additional phases becomes part of the permit. All submittals and schedules shall be revised as specified by the Department. Upon approval, including approval with conditions or modifications, all documents shall be considered final, and the Permittee shall implement all plans and schedules as written.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

2. The results of all plans and reports shall be submitted in accordance with the approved schedule. Extensions of the due date for submittals may be granted by the Department based on the Permittee's demonstration that sufficient justification for the extension exists.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

3. If the Permittee at any time determines that the SAR information required under Condition IV.C., or RFI Workplan(s) required under Condition IV.F., no longer satisfies the requirements of 40 CFR 264.101 as adopted in 15A NCAC 13A .0109 or this permit for prior or continuing releases of hazardous waste or hazardous constituents from solid waste management units and/or areas of concern, the Permittee shall submit an amended Workplan(s) to the Department within ninety (90) calendar days of such determination.
   [40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

4. A copy of all reports shall be provided as specified in Condition I.O of this permit. All reports shall be signed and certified in accordance with 40 CFR 270.11 as adopted in 15A NCAC 13A .0113.
   [40 CFR 270.11 as adopted in 15A NCAC 13A .0113]

M. REMEDY DESCRIPTION

Section Reserved

[40 CFR 264.101 as adopted in 15A NCAC 13A .0109]

PART V - WASTE MINIMIZATION

A. GENERAL REQUIREMENTS

The Permittee must certify, no less often than annually, that a program is in place to reduce the volume and toxicity of hazardous waste to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage or disposal is the most practicable method available to the Permittee which minimizes the present and future threat to human health and the environment. Copies of the certification shall be maintained in the facility operating record for three years.
[Section 3005(h) of RCRA, codified at 42 U.S.C. § 6925(h), and 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109]

B. WASTE MINIMIZATION PROGRAM OBJECTIVES

The Waste Minimization Program should include the following elements:

1. Top Management Support
   a. Dated and signed policy describing management support for waste minimization and for implementation of a waste minimization plan.
   b. Description of employee awareness and training programs designed to involve employees in waste minimization planning and implementation to the maximum extent feasible.
   c. Description of how a waste minimization plan has been incorporated into management practices so as to ensure ongoing efforts with respect to product design, capital planning, production operations, and maintenance.

2. Characterization of Waste Generation
   Identification of types, amounts, and hazardous constituents of waste streams, with the source and date of generation.

3. Periodic Waste Minimization Assessments
   a. Identification of all points in a process where materials can be prevented from becoming a waste or can be recycled.
   b. Identification of potential waste reduction and recycling techniques applicable to each waste, with a cost estimate for capital investment and implementation.
   c. Description of technically and economically practical waste reduction/recycling options to be implemented, and a planned schedule for implementation.
   d. Specific performance goals, preferably quantitative, for the source reduction of waste by stream. Whenever possible, goals should be stated as weight of waste generated per standard unit of production, as defined by the generator.

4. Cost Allocation System
   a. Identification of waste management costs for each waste, factoring in liability, transportation, record keeping, personnel, pollution control, treatment, disposal, compliance and oversight costs to the extent feasible.

b. Description of how departments are held accountable for the wastes they generate.
c. Comparison of waste management costs with costs of potential reduction and recycling techniques applicable to each waste.

5. Technology Transfer
Description of efforts to seek and exchange technical information on waste minimization from other parts of the company, other firms, trade associations, technical assistance programs, and professional consultants.

6. Program Evaluation
a. Description of types and amounts of hazardous waste reduced or recycled.
b. Analysis and quantification of progress made relative to each performance goal established and each reduction technique to be implemented.
c. Amendments to waste minimization plan and explanation.
d. Explanation and documentation of reduction efforts completed or in progress before development of the waste minimization plan.
e. Explanation and documentation regarding impediments to hazardous waste reduction specific to the individual facility.

[40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109]

References: "Draft Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program", 54 FR 25056, June 12, 1989.

"Waste Minimization Opportunity Assessment Manual", EPA/625/788/003, July 1988.

PART VI - LAND DISPOSAL RESTRICTIONS

A. GENERAL RESTRICTIONS

40 CFR Part 268 as adopted in 15A NCAC 13A .0112 identifies hazardous wastes that are restricted from land disposal and defines those limited circumstances under which an otherwise prohibited waste may continue to be placed on or in a land treatment, storage, or disposal unit. The Permittee shall maintain compliance with the requirements of 40 CFR Part 268 as adopted in 15A NCAC 13A .0112. Where the Permittee has applied for an extension, waiver, or variance under 40 CFR Part 268 as adopted in 15A NCAC 13A .0112, the Permittee shall comply with all restrictions on land disposal under this Part once the effective date for the waste has been reached pending final approval of such application.
[40 CFR Part 268 as adopted in 15A NCA 13A .0112]

B. LAND DISPOSAL PROHIBITIONS AND TREATMENT STANDARDS

1. A restricted waste identified in 40 CFR Part 268, Subpart C, as adopted in 15A NCAC 13A .0112 may not be placed in a land disposal unit without further treatment unless the requirements of 40 CFR Part 268, Subparts C and/or D, as adopted in 15A NCAC 13A .0112 are met.
   [40 CFR Part 268, Subparts C and D, as adopted in 15A NCAC 13A .0112]

2. The storage of hazardous wastes restricted from land disposal under 40 CFR Part 268 as adopted in 15A NCAC 13A .0112 is prohibited unless the requirements of 40 CFR Part 268, Subpart E, as adopted in 15A NCAC 13A .0112 are met.
   [40 CFR Part 268 as adopted in 15A NCA 13A .0112]

C. DEFINITIONS

For the purposes of 40 CFR Part 268 as adopted in 15A NCAC 13A .0112, "Land Disposal" means placement in or on the land, except in a corrective action management unit or staging pile, and includes, but is not limited to, placement in a landfill, surface impoundment, waste pile, injection well, land treatment facility, salt dome formation, underground mine or cave, or placement in a concrete vault or bunker intended for disposal purposes.
[40 CFR Part 268 as adopted in 15A NCA 13A .0112]

PART VII - ORGANIC AIR EMISSIONS REQUIREMENTS FOR PROCESS VENTS AND EQUIPMENT LEAKS

A. APPLICABILITY

40 CFR Part 264, Subpart AA contains emission standards for process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that manage hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight. 40 CFR Part 264, Subpart AA does not apply to Air Stripping operations used for corrective action purposes.
[40 CFR 264.1030 as adopted in 15A NCA 13A .0109]

40 CFR Part 264, Subpart BB contains emission standards that address leaks from specific equipment (i.e. pumps, valves, compressors, pressure relief devices, etc.) that contains or contacts hazardous wastes with organic concentrations of at least ten (10) percent by weight.
[40 CFR 264.1050 as adopted in 15A NCA 13A .0109]

B. ORGANIC AIR EMISSION STANDARDS

There are no units at the present time to which the Organic Air Emissions Requirements of 40 CFR Part 264, Subpart AA and/or Subpart BB, as adopted in 15A NCAC 13A .0109 applies.

If the Permittee should change, modify, or otherwise identify any unit that is or has become subject to these regulations, the Permittee is required to comply with all 40 CFR Part 264, Subpart AA and Subpart BB, as adopted in 15A NCAC 13A .0109 regulations and shall submit all 40 CFR 270.24 and 270.25 as adopted in 15A NCAC 13A .0113 informational requirements within thirty (30) calendar days after implementation of the unit's modification.

[40 CFR Part 264, Subpart AA and Subpart BB, as adopted in 15A NCAC 13 A .0109; 40 CFR 270.24 and 270.25 as adopted in 15A NCA 13A .0113]

PART VIII - RCRA ORGANIC AIR EMISSION REQUIREMENTS

A. APPLICABILITY

1. 40 CFR Part 264, Subpart CC applies to facilities that treat, store, or dispose of hazardous waste in tanks, containers, miscellaneous units, or surface impoundments for which hazardous wastes entering the unit have an average volatile organic concentration equal to or more than 500 parts per million by weight (ppmw), except as provided for in 40 CFR 264.1 and 264.1080(b) as adopted in 15A NCAC 13A .0109.
   [40 CFR 264.1080 as adopted in 15A NCAC 13A .0109]

2. The conditions of this Part apply to the hazardous waste management units identified below, for which required control equipment has been installed and is operational or are exempt from 40 CFR Part 264, Subpart CC standards under 40 CFR 264.1082(c) as adopted in 15A NCAC 13A .0109.
   [40 CFR 264.1082 as adopted in 15A NCAC 13A .0109]

Table VIII.A.
Hazardous Waste Management Units (HWMU) for which Subpart CC Emissions Controls are Installed

HWMU Designation/ Identification Number	HWMU Type	Description of Air Emission Control System and/or Management Practices
In general, all container storage rooms/ areas of the WMF are subject, except for the circumstances noted	Container	Container Level 1- Containers must meet DOT regulations on packaging hazardous materials or are equipped with covers and closure devices that form a continuous barrier over the container openings; containers remain closed except to add waste or obtain a sample as described in Section C of the Attachment. Management of small containers (less than 26 gal) is exempt under 40 CFR 264.1080(b)(2)
Mixed Wastes (exempt)	Containers	Management of radioactive mixed waste is exempt under 40 CFR 264.1080(b)(6)
The Auxiliary Unit (exempt)	Small Containers (less than 26 gal)	Management of small containers (less than 26 gal) is exempt under 40 CFR 264.1080(b)(2)

B. EMISSION CONTROL TECHNOLOGY

The Permittee shall install and maintain all regulated units and associated emission control technology in accordance with the detailed plans, schedules, information, and reports as contained in Subpart CC of the Attachment.
[40 CFR 264.1082(b) as adopted in 15A NCAC 13A .0109]

C. GENERAL STANDARDS

The Permittee shall comply with the applicable requirements of 40 CFR Part 264, Subpart CC, as adopted in 15A NCAC 13A .0109 and as described in Subpart CC of the Attachment.
[40 CFR Part 264, Subpart CC, as adopted in 15A NCAC 13A .0109]

D. RECORDKEEPING REQUIREMENTS

The Permittee shall maintain records in accordance with the requirements specified in 40 CFR 264.1089 adopted in 15A NCAC 13A .0109 and as described in Subpart CC of the Attachment.
[40 CFR 264.1089 as adopted in 15A NCAC 13A .0109]

E. REPORTING REQUIREMENTS

1. For each tank, surface impoundment, or container which manages hazardous waste that is exempted from using air emission controls, a written report shall be submitted to the Department within fifteen (15) calendar days of each occurrence when hazardous waste is placed in the waste management unit in noncompliance with 40 CFR 264.1082(c)(1) or (c)(2) as adopted in 15A NCAC 13A .0109, as applicable. The written report shall contain the EPA identification number, facility name and address, a description of the noncompliance event and the cause, the dates of the noncompliance, and the actions taken to correct the noncompliance and prevent reoccurrence of the noncompliance.
[40 CFR 264.1090(a) as adopted in 15A NCAC 13A .0109]

2. All reports shall be signed and dated by an authorized representative of the Permittee as per Condition I.F of this permit and 40 CFR 270.11(b) as adopted in 15A NCAC 13A .0113.
[40 CFR 264.1090 as adopted in 15A NCAC 13A .0109 and 40 CFR 270.11(b) as adopted in 15A NCAC 13A .0113]

F. NOTIFICATION OF NEW UNITS

Prior to installing any tank, container, surface impoundment or miscellaneous unit subject to 40 CFR Part 264, Subpart CC, the Permittee shall apply for a permit modification under 40 CFR 270.42 as adopted in 15A NCAC 13A .0113 and provide specific Part B application information required under 40 CFR 270.14 through 17, 270.23, and 270.27 as adopted in 15A NCAC 13A .0113, as applicable, with the modification request.
[40 CFR 270.14–.17, 270.23, 270.27, and 270.42 as adopted in 15A NCAC 13A .0113]

APPENDIX A

SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

Solid Waste Management Units & Areas of Concern Summary

Conducted in 1990, the RCRA Facility Assessment (*RFA 1990*), identified 44 Solid Waste Management Units (SWMUs) and 3 Areas of Concern (AOC). Of these, 11 SWMUs and 1 AOC required resolution. Six were resolved through closure of the old waste management facility. Five SWMUs and the AOC were resolved following further investigation and/or confirmatory sampling. There are no outstanding SWMU/AOC issues remaining; all have been determined No Further Action (NFA) at this time.

SWMU #47 is the Environmental Health & Safety Waste Management Facility with the active permitted storage areas listed in Part III of this permit.

Complete List of Solid Waste Management Units & Areas of Concern – all are NFA at this time:

SWMU/ AOC Number	Description	Location	Status
1	Former Hazardous Waste Storage Building	1325 Varsity Drive Former HW Bldg	Clean closure of old facility completed & accepted by NCDENR 2/9/96. Demolished
2	Former Distillation Unit	1325 Varsity Drive Former HW Bldg	Unit Clean Closed/ Disposed during SWMU #1 Closure
3	Former Waste Bulking/ Blending Area	1325 Varsity Drive Former HW Bldg	Clean Closed/Demolished 1996 with SWMU #1
4	Former Acid/ Base Neutralization Area	1325 Varsity Drive Former HW Bldg	Clean Closed/Demolished 1996 with SWMU #1
5	Former Overflow Pad	1325 Varsity Drive Former HW Bldg	Clean Closed/Demolished 1996 with SWMU #1
6	Armory Shop Satellite Accumulation Area	Adjacent to Cates Steam Plant	Confirmatory Sampling (CS) indicated no concerns and site demolished
7	Carpentry Shop Satellite Accumulation Area	Hodges	NFA, *RFA 1990*
8	Paint Waste Satellite Accumulation Area	Park Shops	Moved to Sullivan Site NFA, Renovated
9	University Graphics Satellite Accumulation Area	Press Room	NFA, *RFA 1990* / Closed
10	Photochemical Satellite Accumulation Areas	Throughout Campus	NFA, *RFA 1990*
11	Laundry Satellite Accumulation Area	Language & Comp. Lab	NFA, *RFA 1990* / Closed

SWMU/ AOC Number	Description	Location	Status
12	Demineralizer Bed Satellite Accumulation Area	Burlington Reactor	NFA, *RFA 1990*
13	Gardner Hall Satellite Accumulation Area	Room 3200 Gardner	NFA, *RFA 1990* / Area Closed
14	Microelectronics Satellite Accumulation Area	Daniels Hall	NFA, *RFA 1990* / Area Moved
15	Tobacco Head House Satellite Accumulation Area	Adjacent To Gardner Hall	NFA, *RFA 1990* / Demolished
16	Withers Hall Satellite Accumulation Area	Undergraduate Labs	NFA, *RFA 1990* / Area Moved
17	Williams Hall Satellite Accumulation Area	External Storage Units	NFA, *RFA 1990* Demolished
18	Hodges Satellite Accumulation Area	Outside of Hodges	NFA, Remediation activities completed & accepted by NCDENR 9/12/01
19	David Clark Satellite Accumulation Area	Outdoor Cage	NFA, *RFA 1990* / Area Closed
20	Building 523, Low-level/Mixed Radioactive Waste	Gorman Street	Clean Closed/Demolished
21	Portable Waste Oil Tank	Riddick Auto Shop	NFA, *RFA 1990* / Moved
22	Empty Drum Storage Area No. 1	Sullivan Site	NFA, *RFA 1990*
23	Empty Drum Storage Area No. 2 (old haz waste storage bldg.)	1325 Varsity Drive Former HW Bldg	Clean Closed/Demolished 1996 with SWMU #1
24	Pesticide Dumpster	Building 524, Gorman St.	NFA, *RFA 1990* / Closed
25	Used Battery Storage Area	Riddick Stands	NFA, *RFA 1990* / Demolished
26	Scrap Pile and Trailer	Near Building 523	NFA, Remediation activities completed & accepted by NCDENR 7/10/01
27	Scrap Metal Dumpster	Sullivan Site	NFA, *RFA 1990* / Moved
28	Waste Transfer Station	Sullivan Site	NFA, *RFA 1990* / Closed

SWMU/ AOC Number	Description	Location	Status
29	Armory Shop Degreasing Area and Drain	Adjacent to Cates Steam Plant	NFA, Remediation activities completed & accepted by NCDENR 7/2/99. Demolished
30	Pilot Paper Plant Drains	Robertson/Pulp & Paper	NFA, *RFA 1990*
31	Robertson Biltmore Drain	Lab in Robertson	NFA, *RFA 1990*
32	Strip Tank Drain and Pipe	Park Shops	NFA, *RFA 1990* / Closed
33	Schaub Hall Drain	Schaub Basement	NFA, *RFA 1990*
34	Abandoned Neutralization Sump	Williams Hall	NFA - RFI/CS activities completed and accepted by NCDENR 9/12/01
35	Neutralization Tank	Daniels Hall	NFA, *RFA 1990*
36	Former Neutralization Sump	Daniels Hall	NFA, *RFA 1990* / Closed
37	Former Vehicle Washing Pad	Old Auto Wash	NFA, *RFA 1990* / Demolished
38	University Vehicle Washing Pad	Sullivan Site	NFA, *RFA 1990* / Demolished
39	Sanitary Sewer System	Throughout Campus	NFA, *RFA 1990*
40	Storm Sewer System	Riddick Stands	NFA, Remediation activities completed and accepted by NCDENR 9/12/01
41	Power Plant Sump	Yarborough Steam Plant	NFA - RFI/CS activities completed and accepted by NCDENR in 1994
42	Acid Scrubber	Daniels Hall	NFA, *RFA 1990*
43	Fire Box - Portable Training Unit	1325 Varsity Drive Former HW Bldg	NFA, *RFA 1990* / Disposed
44	Laundry Solvent Filter	Language & Comp. Lab	NFA, *RFA 1990* / Closed
45	Transformer Storage Area	Yarborough Steam Plant	NFA, *RFA 1990*
46	Former Pesticide Container Site	Adjacent to Former Haz Waste Bldg	NFA, *RFA 1990* / Demolished

SWMU/ AOC Number	Description	Location	Status
47	**Environmental Health & Safety, Waste Management Facility**	**2620 Wolf Village Way**	**Active Facility**
AOC A	Dan Allen Drainage Ditch	Dan Allen Parking Deck	Remediation/Closed
AOC B	Pesticide Sprayer Discharge Area	Sullivan Site	NFA - RFI/CS activities completed and accepted by NCDENR 7/2/99
AOC C	Motor Pool Lot	Riddick Stands	NFA, *RFA 1990* – Moved to Sullivan Site

APPENDIX B

RCRA FACILITY INVESTIGATION (RFI) WORKPLAN OUTLINE

I. RFI WORKPLAN REQUIREMENTS

The Permittee shall prepare a RCRA Facility Investigation (RFI) Workplan that meets the requirements of Part IV of this document and the RFI Guidance, EPA-530/SW-89-031. This Workplan shall also include the development of the following plans, which shall be prepared concurrently:

A. Project Management Plan

Permittee shall prepare a Project Management Plan which will include a discussion of the technical approach, schedules and personnel. The Project Management Plan will also include a description of qualifications of personnel performing or directing the RFI, including contractor personnel. This plan shall also document the overall management approach to the RCRA Facility Investigation.

B. Sampling and Analysis Plan(s)

The Permittee shall prepare a plan to document all monitoring procedures: field sampling, sampling procedures and sample analysis performed during the investigation to characterize the environmental setting, source, and releases of hazardous constituents, so as to ensure that all information and data are valid and properly documented. The Sampling Strategy and Procedures shall be in accordance with Characterization of Hazardous Waste Sites A Methods Manual: Volume II., Available Sampling Methods, EPA-600/4-84-076, or EPA Region IV Engineering Compliance Branch's Standard Operating Procedure and Quality Assurance Manual (SOP). Any deviations from these references must be requested by the applicant and approved by EPA. The Sampling and Analysis Plan must specifically discuss the following unless the EPA-600/4-84-076 or SOP procedures are specifically referenced.

1. Sampling Strategy
   a. Selecting appropriate sampling locations, depths, etc.;
   b. Obtaining all necessary ancillary data;
   c. Determining conditions under which sampling should be conducted;
   d. Determining which media are to be sampled (e.g., ground water, air, soil, sediment, subsurface gas);
   e. Determining which parameters are to be measured and where;
   f. Selecting the frequency of sampling and length of sampling period;
   g. Selecting the types of samples (e.g., composites vs. grabs) and number of samples to be collected.

2. Sampling Procedures
   a. Documenting field sampling operations and procedures, including;
      i. Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, preservatives, and absorbing reagents);
      ii. Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;

iii. Documentation of specific sample preservation method;
iv. Calibration of field instruments;
v. Submission of field-biased blanks, where appropriate;
vi. Potential interferences present at the facility;
vii. Construction materials and techniques, associated with monitoring wells and piezometers;
viii. Field equipment listing and sampling containers;
ix. Sampling order; and
x. Decontamination procedures.

b. Selecting appropriate sample containers;
c. Sampling preservation; and
d. Chain-of-custody, including:
   i. Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and
   ii. Pre-prepared sample labels containing all information necessary for effective sample tracking.

3. Sample Analysis

Sample analysis shall be conducted in accordance with SW-846: "Test Methods for Evaluating Solid Waste-Physical/Chemical Methods" (most recent version). The sample analysis section of the Sampling and Analysis Plan shall specify the following:

a. Chain-of-custody procedures, including:
   i. Identification of a responsible party to act as sampling custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipments, and verify the data entered onto the sample custody records;
   ii. Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and
   iii. Specification of laboratory sample custody procedures for sample handling, storage, and dispersal for analysis.
b. Sample storage (e.g., maximum holding times for constituents);
c. Sample preparation methods;
d. Analytical Procedures, including:
   i. Scope and application of the procedure;
   ii. Sample matrix;
   iii. Potential interferences;
   iv. Precision and accuracy of the methodology; and
   v. Method detection limits.
e. Calibration procedures and frequency;
f. Data reduction, validation and reporting;
g. Internal quality control checks, laboratory performance and systems audits and frequency, including:
   i. Method blank(s);
   ii. Laboratory control sample(s);
   iii. Calibration check sample(s);

iv. Replicate sample(s);
v. Matrix-spiked sample(s);
vi. Control charts;
vii. Surrogate samples;
viii. Zero and span gases; and
ix. Reagent quality control checks.

h. Preventative maintenance procedures and schedules;
i. Corrective action (for laboratory problems); and
j. Turnaround time.

C. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to track investigation data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the investigation.

1. Data Record

The data record shall include the following:

a. Unique sample or field measurement code;
b. Sampling or field measurement location and sample or measurement type;
c. Sampling or field measurement raw data;
d. Laboratory analysis ID number;
e. Property or component measures; and
f. Result of analysis (e.g., concentration).

2. Tabular Displays

The following data shall be presented in tabular displays:

a. Unsorted (raw) data;
b. Results for each medium, or for each constituent monitored;
c. Data reduction for statistical analysis, as appropriate;
d. Sorting of data by potential stratification factors (e.g., location, soil layer, topography); and
e. Summary data.

3. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or transits, three dimensional graphs, etc.):

a. Display sampling location and sampling grid;
b. Indicate boundaries of sampling area, and area where more data are required;
c. Display geographical extent of contamination;
d. Illustrate changes in concentration in relation to distances from the source, time, depth, or other parameters; and

e. Indicate features affecting inter-media transport and show potential receptors.

II. RCRA FACILITY INVESTIGATION (RFI) REQUIREMENTS

RCRA Facility Investigation:

The Permittee shall conduct those investigations necessary to: characterize the facility (Environmental Setting); define the source (Source Characterization); define the degree and extent of release of hazardous constituents (Contamination Characterization); and identify actual or potential receptors.

The investigations should result in data of adequate technical content and quality to support the development and evaluation of the corrective action plan if necessary. The information contained in a RCRA Part B permit application and/or RCRA Section 3019 Exposure Information Report may be referenced as appropriate but must be summarized in both the RFI Workplan and RFI Report.

All sampling and analyses shall be conducted in accordance with the Sampling and Analysis Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

A. Environmental Setting

The Permittee shall collect information to supplement and/or verify Part B information on the environmental setting at the facility. The Permittee shall characterize the following as they relate to identified sources, pathways and areas of releases of hazardous constituents from Solid Waste Management Units.

1. Hydrogeology

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information:

a. A description of the regional and facility specific geologic and hydrogeologic characteristics affecting ground-water flow beneath the facility, including:
   i. Regional and facility specific stratigraphy: description of strata including strike and dip, identification of stratigraphic contacts;
   ii. Structural geology: description of local and regional structural features (e.g., folding, faulting, tilting, jointing, etc.);
   iii. Depositional history;
   iv. Regional and facility specific ground-water flow patterns; and
   v. Identification and characterization of areas and amounts of recharge and discharge.

b. An analysis of any topographic features that might influence the ground-water flow system.

c. Based on field data, tests, and cores, a representative and accurate classification and description of the hydrogeologic units which may be part of the migration pathways at the facility (i.e., the aquifers and any intervening saturated and unsaturated units), including:
   i. Hydraulic conductivity and porosity (total and effective);
   ii. Lithology, grain size, sorting, degree of cementation;
   iii. An interpretation of hydraulic interconnections between saturated zones; and
   iv. The attenuation capacity and mechanisms of the natural earth materials (e.g., ion exchange capacity, organic carbon content, mineral content, etc.).

d. Based on data obtained from ground-water monitoring wells and piezometers installed up gradient and down gradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:
   i. Water-level contour and/or potentiometric maps;
   ii. Hydrologic cross-sections showing vertical gradients;
   iii. The flow system, including the vertical and horizontal components of flow; and
   iv. Any temporal changes in hydraulic gradients, for example, due to tidal or seasonal influences.

e. A description of man-made influences that may affect the hydrology of the site, identifying:
   i. Local water-supply and production wells with an approximate schedule of pumping; and
   ii. Man-made hydraulic structures (pipelines, trench drains, ditches, etc.)

2. Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of contaminant release(s). Such characterization may include, but not be limited to, the following types of information as appropriate:

a. Surface soil distribution;
b. Soil profile, including ASTM classification of soil;
c. Transepts of soil stratigraphy;
d. Hydraulic conductivity (saturated and unsaturated);
e. Relative permeability;
f. Bulk density;
g. Porosity;
h. Soil sorption capacity;
i. Cation exchange capacity (CEC);
j. Soil organic content;
k. Soil pH;
l. Particle size distribution;
m. Depth of water table;
n. Moisture content;
o. Effect of stratification on unsaturated flow;

p. Infiltration;
q. Evapotranspiration;
r. Storage capacity;
s. Vertical flow rate; and
t. Mineral content.

3. Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility. Such characterizations may include, but not be limited to, the following activities and information:

a. Description of the temporal and permanent surface water bodies including:
   i. For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature stratification, and volume;
   ii. For impoundments: location, elevation, surface area, depth, volume, freeboard, and construction and purpose;
   iii. For streams, ditches, and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, flooding tendencies (i.e., 100 year event), discharge point(s), and general contents.
   iv. Drainage patterns; and
   v. Evapotranspiration.

b. Description of the chemistry of the natural surface water and sediments. This includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, oxygen demand, total organic carbon, specific contaminant concentrations, etc.

c. Description of sediment characteristics including:
   i. Deposition area;
   ii. Thickness profile; and
   iii. Physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.)

4. Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information may include, but not be limited to:

a. A description of the following parameter:
   i. Annual and monthly rainfall averages;
   ii. Monthly temperature averages and extremes;
   iii. Wind speed and direction;
   iv. Relative humidity/dew point;
   v. Atmospheric pressure;
   vi. Evaporation data;
   vii. Development of inversions; and

viii. Climate extremes that have been known to occur in the vicinity of the facility, including frequency of occurrence (i.e., Hurricanes).

b. A description of topographic and man-made features which affect air flow and emission patterns, including:
   i. Ridges, hills or mountain area;
   ii. Canyons or valleys;
   iii. Surface water bodies (e.g., rivers, lakes, bays, etc.); and
   iv. Buildings.

B. Source Characterization

For those sources from which releases of hazardous constituents have been detected the Permittee shall collect analytical data to completely characterize the wastes and the areas where wastes have been placed, to the degree that is possible without undue safety risks, including: type; quantity; physical form; disposition (containment or nature of deposits); and facility characteristics affecting release (e.g., facility security, and engineering barriers). This shall include quantification of the following specific characteristics, at each source area:

1. Unit/Disposal Area Characteristics

   a. Location of unit/disposal area;
   b. Type of unit/disposal area;
   c. Design features;
   d. Operating practices (past and present);
   e. Period of operation;
   f. Age of unit/disposal area;
   g. General physical conditions; and
   h. Method used to close the unit/disposal area.

2. Waste Characteristics:

   a. Type of wastes placed in the unit;
      i. Hazardous classification (e.g., flammable, reactive, corrosive, oxidizing or reducing agent);
      ii. Quantity; and
      iii. Chemical composition.

   b. Physical and chemical characteristics such as;
      i. Physical form (solid, liquid, gas);
      ii. Physical description (e.g., powder, oily sludge);
      iii. Temperature;
      iv. pH;
      v. General chemical class (e.g., acid, base, solvent);
      vi. Molecular weight;
      vii. Density;

viii. Boiling point;
ix. Viscosity;
x. Solubility in water;
xi. Cohesiveness of the waste; and
xii. Vapor pressure.

c. Migration and dispersal characteristics of the waste such as:
i. Sorption capability;
ii. Biodegradability, bioconcentration, biotransformation;
iii. Photodegradation rates;
iv. Hydrolysis rates; and
v. Chemical transformations.

The Permittee shall document the procedures used in making the above determinations.

C. Characterization of Releases of Hazardous Constituents

The Permittee shall collect analytical data on ground water, soils, surface water, sediment, and subsurface gas contamination in the vicinity of the facility in accordance with the sampling and analysis plan as required above. These data shall be sufficient to define the extent, origin, direction, and rate of movement of contamination. Data shall include time and location of sampling, media sampled, concentrations found, conditions during sampling, and the identity of the individuals performing the sampling and analysis. The Permittee shall address the following types of contamination at the facility:

1. Ground-water Contamination
The Permittee shall conduct a ground-water investigation to characterize any plumes of contamination detected at the facility. This investigation shall at a minimum provide the following information:

a. A description of the horizontal and vertical extent of any plume(s) of hazardous constituents originating from or within the facility;
b. The horizontal and vertical direction of contamination movement;
c. The velocity of contaminant movement;
d. The horizontal and vertical concentration profiles of hazardous constituents in the plume(s);
e. An evaluation of factors influencing the plume movement; and
f. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations (e.g., well design, well construction, geophysics, modeling, etc.).

2. Soil Contamination
The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the saturated zone in the vicinity of any contaminant release. The investigation may include the following information:

a. A description of the vertical and horizontal extent of contamination;
b. A description of appropriate contaminant and soil chemical properties within the contaminant source area and plume. This may include contaminant solubility, speciation, absorption, leachability, exchange capacity, biodegradability, hydrolysis, photolysis, oxidation and other factors that might affect contaminant migration and transformation;
c. Specific contaminant concentrations;
d. The velocity and direction of contaminant movement; and
e. An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

3. Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from releases of hazardous constituents at the facility. The investigation may include, but not be limited to, the following information:

a. A description of the horizontal and vertical extent of any plume(s) originating from the facility, and the extent of contamination in underlying sediments;
b. The horizontal and vertical direction of contaminant movement;
c. The contaminant velocity;
d. An evaluation of the physical, biological and chemical factors influencing contaminant movement;
e. An extrapolation of future contaminant movement; and
f. A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

The Permittee shall document the procedures used in making the above determinations.

4. Air Contamination

The Permittee shall conduct an investigation to characterize gaseous releases of hazardous constituents into the atmosphere or any structures or buildings. This investigation may provide the following information:

a. A description of the horizontal and vertical direction and velocity of contaminant movement;
b. The rate and amount of the release; and
c. The chemical and physical composition of the contaminant(s) released, including horizontal and vertical concentration profiles.

The Permittee shall document the procedures used in making the above determinations.

D. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analysis of biological samples and/or data on observable effects in ecosystems may also be obtained as appropriate. The following characteristics shall be identified:

1. Current local uses and planned future uses of ground water:
   a. Type of use (e.g., drinking water source: municipal or residential, agricultural, domestic/non-potable, and industrial); and
   b. Location of ground-water users, to include withdrawal and discharge wells, within one mile of the impacted area.

   The above information should also indicate the aquifer or hydrogeologic unit used and/or impacted for each item.

2. Current local uses and planned future uses of surface waters directly impacted by the facility:
   a. Domestic and municipal (e.g., potable and lawn/gardening watering);
   b. Recreational (e.g., swimming, fishing);
   c. Agricultural;
   d. Industrial; and
   e. Environmental (e.g., fish and wildlife propagation).

3. Human use of or access to the facility and adjacent lands, including but not limited to:
   a. Recreation;
   b. Hunting;
   c. Residential;
   d. Commercial; and
   e. Relationship between population locations and prevailing wind direction.

4. A general description of the biota in surface water bodies on, adjacent to, or affected by the facility.

5. A general description of the ecology within the area adjacent to the facility.

6. A general demographic profile of the people who use or have access to the facility and adjacent land, including, but not limited to: age; sex; and sensitive subgroups.

7. A description of any known or documented endangered or threatened species near the facility.

APPENDIX C

CORRECTIVE MEASURES STUDY PLAN OUTLINE (CMS)

I. IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE MEASURES ALTERNATIVES

Based on the results of the RCRA Facility Investigation and consideration of the identified potential corrective measure technologies, the Permittee shall identify, screen and develop the alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. Description of Current Situation

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RCRA Facility Investigation (RFI) Report. The Permittee shall provide an update to information presented in the RFI regarding previous response activities and interim measures which have been or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. Establishment of Corrective Action Objectives

The Permittee shall propose facility-specific objectives for the corrective action. These objectives shall be based on public health and environmental criteria, information gathered during the RFI, EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning ground-water releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR 264.100 as adopted in 15A NCAC 13A .0109.

C. Screening of Corrective Measure Technologies

The Permittee shall review the results of the RFI and assess the technologies which are applicable at the facility. The Permittee shall screen the corrective measure technologies to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to screen inapplicable technologies are described in more detail below:

1. Site Characteristics
   Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

2. Waste Characteristics
Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

3. Technology Limitations
During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. Identification of the Corrective Measure Alternatives

The Permittee shall develop the Corrective Measure Alternatives based on the corrective action objectives and analysis of potential corrective measure technologies. The Permittee shall rely on engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternatives. The alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies.

II. EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the initial screening and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas:

1. Technical;

a. The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability and safety.

i. Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies; and

ii. Useful life is defined as the length of time the level of desired effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the project.

b. The Permittee shall provide information on the reliability of each corrective measure including their operation and maintenance requirements and their demonstrated reliability:

i. Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered; and

ii. Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Respondent should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies have been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response:

i. Constructability is determined by conditions both internal and external to the facility conditions and include such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities; and

ii. Time has two components that shall be addressed: the time it takes to implement a corrective measure and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental;
The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; and adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health;
The Permittee shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. The assessment will describe the concentrations and characteristics of the contaminants on-site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time for management of mitigation measures, the relative levels of each alternative with existing criteria, standards, or guidelines acceptable to EPA.

4. Institutional
The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, state and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative. If the selected remedy is capping and closure in place, a notation must be made in the land deed.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (non-construction and overhead) costs.

a. Direct capital costs include:

i. Construction costs:
Costs of materials, labor (including fringe benefits and worker's compensation), and equipment required to install the corrective measure.
ii. Equipment costs:
Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;
iii. Land and site-development costs:
Expenses associated with purchase of land and development of existing property; and
iv. Buildings and services costs:
Costs of process and non-process buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:
i. Engineering expenses:
Cost of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;
ii. Legal fees and license or permit costs:
Administrative and technical costs necessary to obtain licenses and permits for installation and operation;
iii. Start-up and shakedown costs:
Costs incurred during corrective measure start-up; and
iv. Contingency allowances:
Funds to cover costs resulting from unforeseen circumstances, such as inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accident insurance; real estate taxes on purchased land or right-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover (1) costs of anticipated replacement or rebuilding of equipment and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items that do not fit any of the above categories.

III. JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Trade-offs among health risks, environmental effects, and other pertinent factors shall be highlighted. The Department will select the corrective measure alternative or alternatives to be implemented based on the results obtained from work completed under Section II and III. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proved effective under waste and facility conditions similar to those anticipated will be given preference;

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure(s) must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the

minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure(s) posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

IV. REPORTS

The Permittee shall prepare a Corrective Measure Study Report presenting the results obtained from Sections I through III and recommending a corrective measure alternative. Copies of the preliminary report shall be provided by the Permittee to the Department for review and approval.

A. Draft

The Report shall at a minimum include:

1. A description of the facility;
   a. Site topographic map and preliminary layouts.

2. A summary of the corrective measure(s) and rationale for selection;
   a. Description of the corrective measure(s) and rationale for selection;
   b. Performance expectations;
   c. Preliminary design criteria and rationale;
   d. General operation and maintenance requirements; and
   e. Long-term monitoring requirements.

3. A summary of the RCRA Facility Investigation and impact on the selected corrective measure or measures;
   a. Field studies (ground water, surface water, soil, air); and
   b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions;
   a. Special technical problems;
   b. Additional engineering data required;
   c. Permits and regulatory requirements;
   d. Access, easements, right-of-way;
   e. Health and safety requirements; and
   f. Community relations activities.

5. Cost Estimates and Schedules;
   a. Capital cost estimate;
   b. Operation and maintenance cost estimate; and
   c. Project schedule design, construction, and operation.

Copies of the draft shall be provided by the Permittee to the Department.

B. Final

The Permittee shall finalize the Corrective Measure Study Report incorporating comments received from the Department on the Draft Corrective Measure Study Report. The report shall become final upon approval by the Department.

C. Public Review and Final Selection of Corrective Measures

Upon receipt of the Final Corrective Measure Study Report, EPA shall announce its availability to the public for review and comment. At the end of the comment period, the Department shall review the comments and then inform the Permittee of the final decision as to the approved Corrective Measures to be implemented.

APPENDIX D

FIGURES

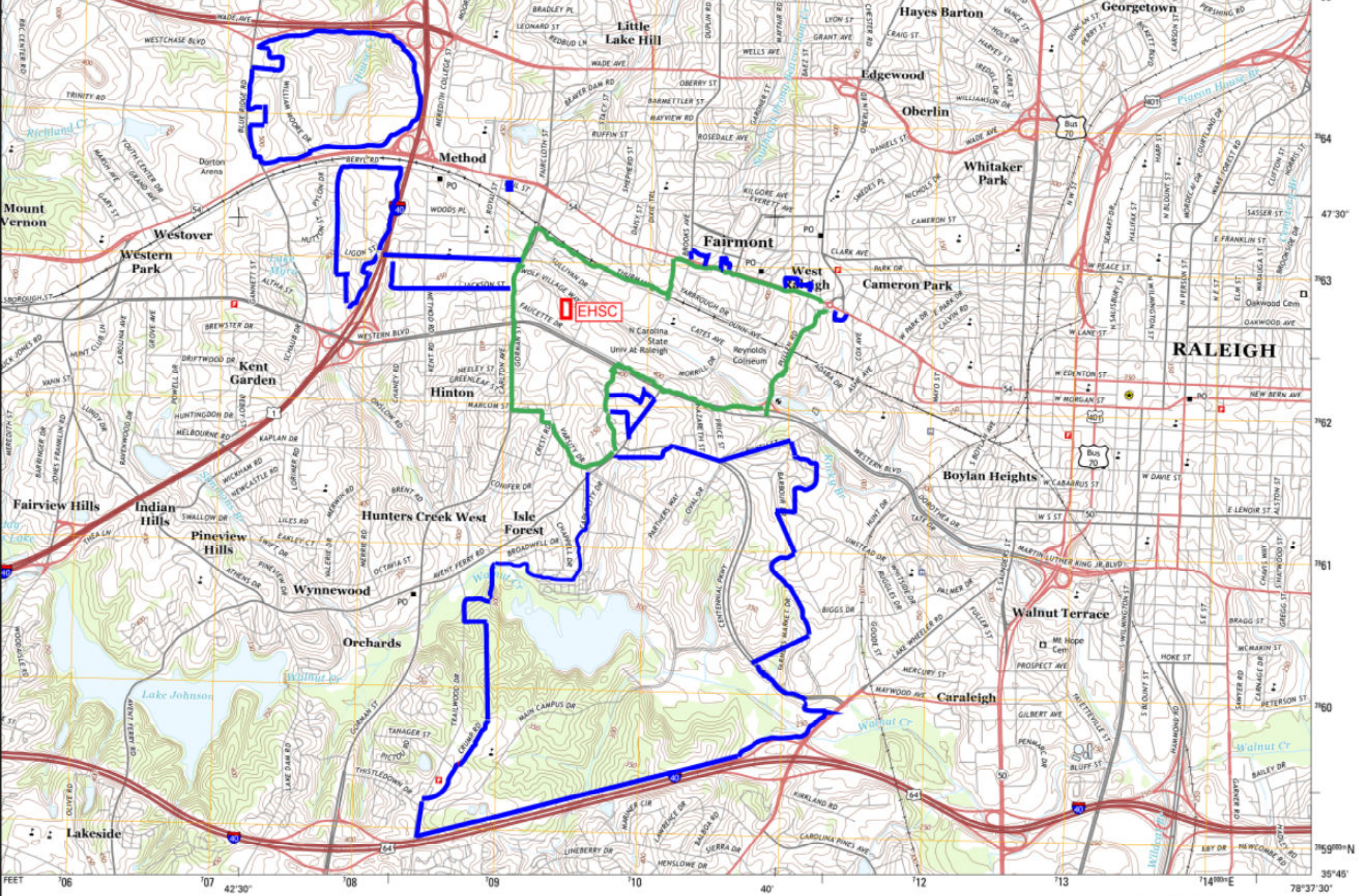
Figure 1 – Topographic Map – NCSU Campus

Figure 2 – Potential Receptor Map

Figure 3 – Site Plan (Fig B-2)

Figure 4 – Site Drawing (Fig A-2)

Figure 5 – Waste Management Facility Building Layout (Fig C-1)



SCALE 1:24 000

KILOMETERS 1 0.5 0 1 2

METERS 1000 500 0 1000 2000

MILES 1 0.5 0 1

FEET 1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

9° 4' 161 MILS | 1° 21' 24 MILS

UTM GRID AND 2013 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID

NORTH CAROLINA

QUADRANGLE LOCATION

Southeast Durham	Bayleaf	Wake Forest
	Raleigh	Raleigh

ROAD CLASSIFICATION

- Expressway
- Secondary Hwy
- Ramp
- Local Connector
- Local Road
- 4WD
- Interstate Route
- US Route
- State Route

FEET 706 707 42'30" 708 709 710 40' 712 713 714000mE 78°37'30"

3964 3963 3962 3961 3960 3959000mN 35°45'

N
W
E
S

Hillsborough St.

1,500-ft Radius

Rocky Branch

WSW-1

Gorman St.

Western Blvd.

Stream segment not observed during site reconnaissance

Receptor Summary

WSW-1: Non-potable WSW; used only for irrigation of NCSU's Doak Field.
Rocky Branch: Surface water; not used as water-supply source.

Legend

- NCSU Hazardous Waste Facility
- Water-supply well (non-potable)
- Parcel boundaries
- Stream

Note: Surface water features and parcel boundaries obtained from Wake County GIS.

0 500 1,000 1,500 2,000 ft

FIGURE 2

POTENTIAL RECEPTOR MAP

NCSU Hazardous Waste Facility
2620 Wolf Village Way
Raleigh, North Carolina 27607

PIEDMONT GEOLOGIC
SMART EARTH SOLUTIONS

CLIENT:	NCSU
PROJECT #:	2424
DRAWING DATE:	1/22/24
DRAWN BY:	JDM
DATA SOURCE:	NC Orthoimagery Program, 2021.

Figure B-2 Site Plan WMF=Waste Management Facility F=Fire hydrant S=Sprinkler room
Storm sewer Sanitary sewer Gas line Fence
U2=Up-gradient monitoring well D3=down-gradient monitoring well

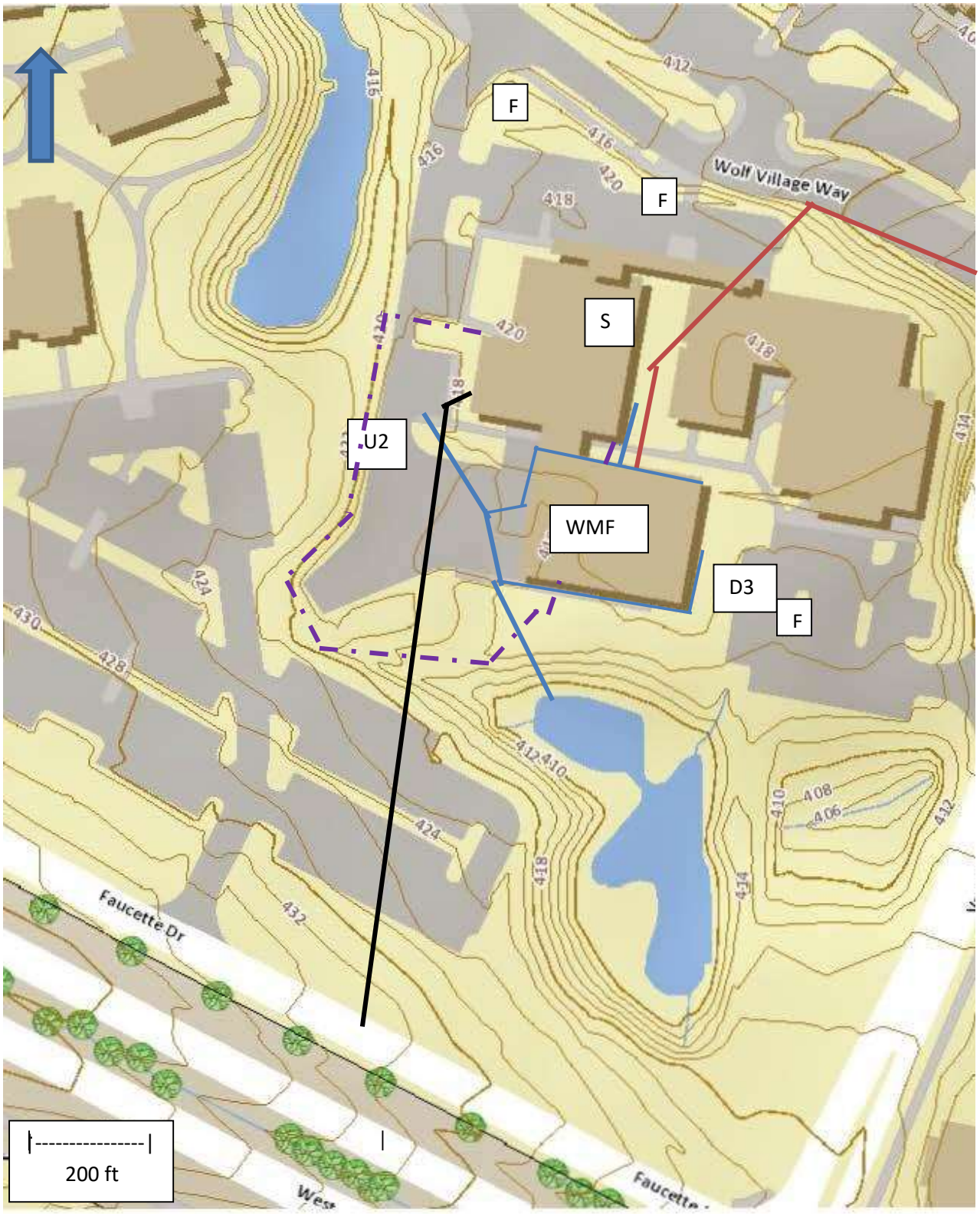
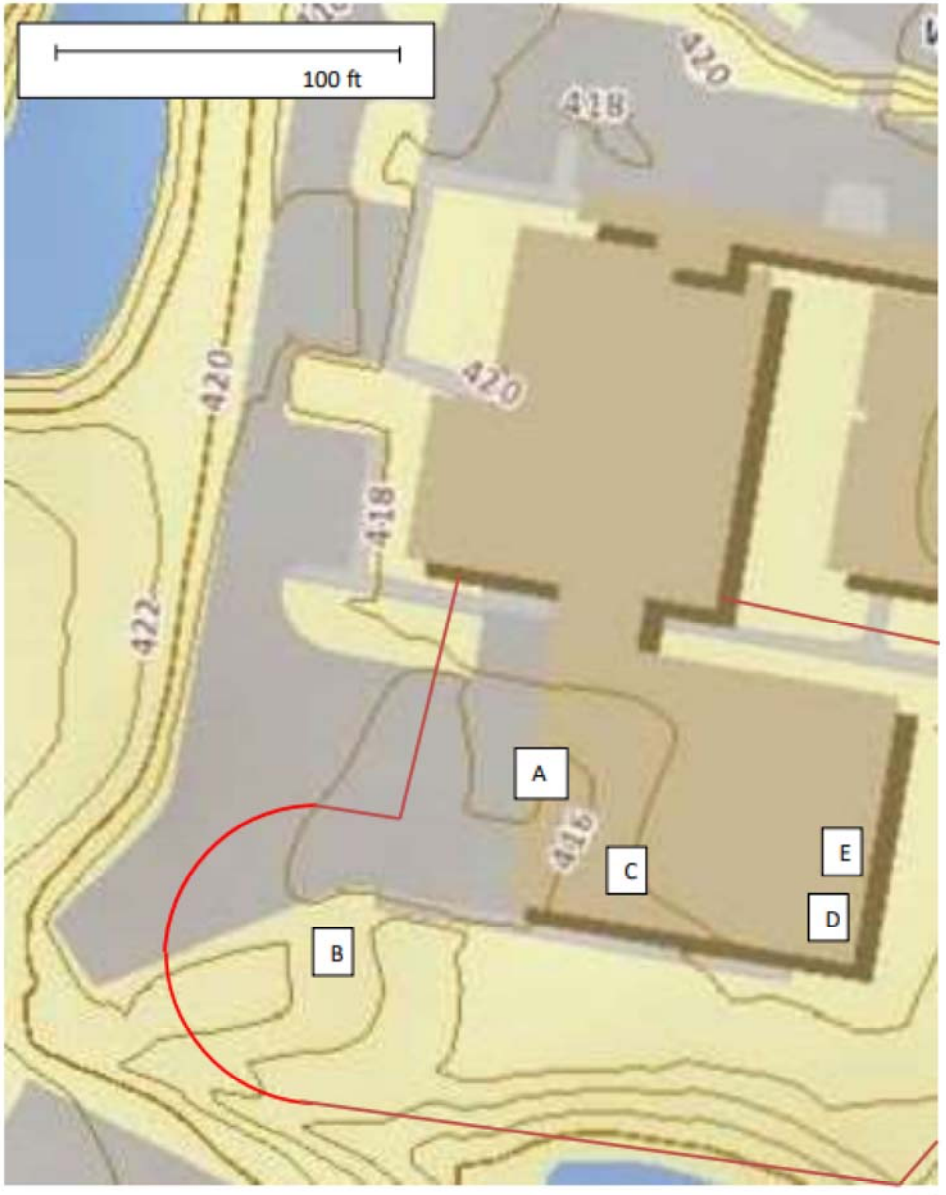
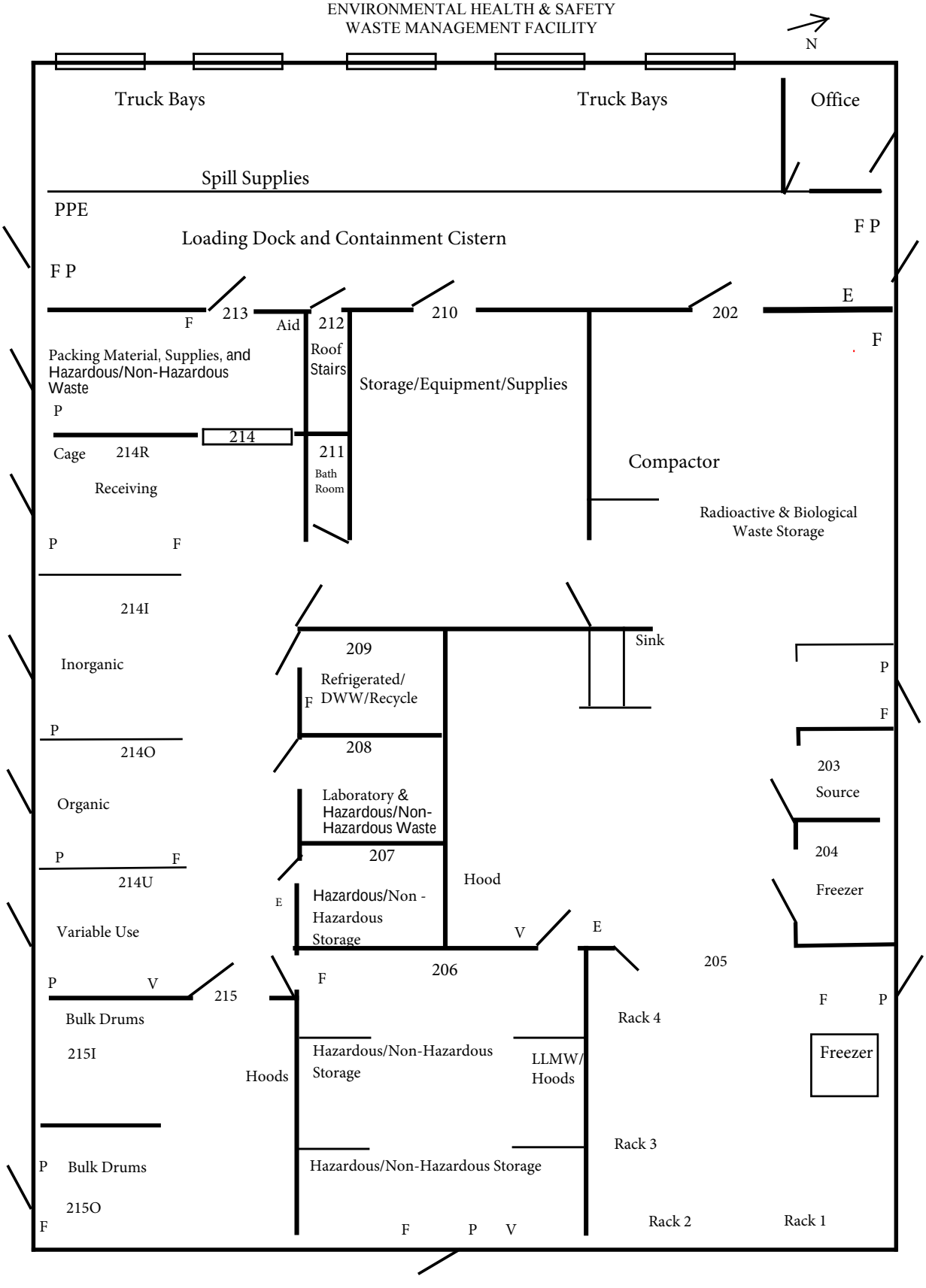


Figure A-2 Site Drawing
Waste Operations and 50-ft. Buffer



NCSU Waste Management Facility (WMF) 2620 Wolf Village Way, Raleigh, NC
EPA ID Number: NCD000830737

FIGURE C-1
ENVIRONMENTAL HEALTH & SAFETY
WASTE MANAGEMENT FACILITY



Aid - First Aid Kit; E - Eye Wash; F- Fire Extinguisher; P - Pull Station; V - Vent Alarm Roll-up fire doors separating 202 & 205 and 213& 214. Room 209 has a Class D extinguisher. Pull stations are located at all exits. Evacuate using nearest exit, meet at designated location.

APPENDIX E

SCHEDULE OF COMPLIANCE

Schedule of Compliance	Due Date
Duty to Reapply for a Permit I.E.2.	Submit a permit renewal application one year prior to permit expiration date
Prepare and submit a biennial report I.H.	Prepare and submit a biennial report on or before March 1 of each even numbered year unless directed otherwise.
Provide for Local government review and input of facility contingency plan II.V.1	At least 120 days prior to submitting an application for permit renewal.
Verify emergency Response resources II.V.2.	Every 2 years after the permit is issued.
Submit sampling and analysis results II.W.1.	Ninety (90) days after the sampling has been completed.
Solid Waste Management Units and Corrective Action	
Notification of Newly Identified SWMUs and AOCs. Condition V.C.1 and Condition V.C.2.	Within fifteen (15) calendar days of discovery.
SWMU Assessment Report. Condition V.C.2.	Within ninety (90) calendar days of notification.
Notification for Newly Discovered Releases at Previously Identified SWMUs and AOCs. Condition V.D.1.	Within fifteen (15) calendar days of discovery
Confirmatory Sampling Workplan for SWMUs identified in Appendix A. Condition V.E.1.	Within forty-five (45) calendar days of notification by the Department for a newly identified SWMU or AOC.
Confirmatory Sampling Report. Condition V.E.3.	In accordance with the schedule in the approved CS Workplan.
RFI Workplan for SWMU(s) and AOC(s) Identified in Appendix A. Condition V.F.1.a.	Within ninety (90) calendar days after the approval of the Confirmatory Sampling Report.

Schedule of Compliance	Due Date
RFI Workplan for SWMU(s) and AOC(s) Identified under Conditions IV.C.1., IV.C.3., IV.D.2., or IV.E.4. Condition IV.F.1.b.	Within ninety (90) calendar days after receipt of notification by the Department which SWMUs or AOCs require an RFI.
RFI Progress Reports. Condition IV.F.3.a.	Quarterly, beginning ninety (90) calendar days from the start date specified by the Department *
Draft RFI Report. Condition IV.F.3.b.	In accordance with the approved RFI Workplan.
Final RFI Report Condition IV.F.3.b.	Within thirty (30) calendar days after receipt of the Department's comments on the Draft RFI Report.
Interim Measures Plan Condition IV.G.1.a.	Within thirty (30) calendar days of notification by the Department.
Interim Measures Progress Reports Condition IV.G.3.a.	In accordance with the approved Interim Measures Workplan. **
Interim Measure Report Condition IV.G.3.b.	Within ninety (90) calendar days of completion of interim measures
CMS Workplan Condition IV.H.1.a.	Within ninety (90) calendar days of notification by the Department that a CMS is needed.
Implementation of CMS Workplan Condition IV.H.2.	Within fifteen (15) calendar days after receipt of Department approval of plan.
Draft CMS Report Condition IV.H.3.a.	In accordance with the schedule in the approved CMS Workplan.
Final CMS Report Condition IV.H.3.a.	Within thirty (30) calendar days of Department's comments on draft CMS Report.
Demonstration of Financial Assurance Condition IV.I.3.	Within one hundred and twenty (120) calendar days after permit modification for remedy.
Imminent Hazard Report Condition IV.K.1. and IV.K.2.	Oral within 24 hours; Written within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances.
Organic Air Emissions (AA, BB, CC)	

Schedule of Compliance	Due Date
Organic Air Emissions Report Condition VIII.B.	Within thirty (30) calendar days after the effective date of the permit or modified permit as required.
Written report of noncompliance of containers, surface impoundments or tanks with 40 CFR 264.1082(c)(1) or (c)(2) Condition VIII.E.1.	Within fifteen (15) calendar days of becoming aware of noncompliance.

The above reports must be signed and certified in accordance with 40 CFR 270.11 as adopted by 15A NCAC 13A .0113.