ID. NUMBER NCD091249417 DATE ISSUED_____, 2018
PERMIT NO. NCD091249417-R2

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

Permittee: Textron, Inc.
40 Westminster St.
Providence, Rhode Island 02903

Owner: S&S Gaston LLC
P.O. Box 1104
Charlotte, NC 28203

Pursuant to the 15A NCAC 13A North Carolina Hazardous Waste Management Rules, a post-closure permit with corrective action is issued to the Textron, Inc. as operator and S&S Gaston, LLC as owner of a hazardous waste facility located in the Catawba River Basin, Gastonia, Gaston County, North Carolina on 3800 Little Mountain Road at latitude 35º 12' 42" and longitude 81º 11' 41"

The Permittee must comply with all terms and conditions of the permit. This permit consists of the conditions discussed in Parts I, II, III, IV, V, VI, VII and 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 Application) is accurate and that the facility will be operated as specified in the Application. Any inaccuracies found in this information could lead to the termination or modification of this permit and potential enforcement action [40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0113]. The Permittee shall inform the North Carolina Department of Environmental Quality of any deviation from or changes in the information in the Application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This permit is effective as of _____, 2018, and shall remain in effect for ten (10) years until _____, 2028, [40 CFR 270.50 as adopted in 15A NCAC 13A .0113] unless revoked and reissued, terminated or continued in accordance with 40 CFR 270.51 as adopted in 15A NCAC 13A .0113.

_____ _____
Julie S. Woosley, Chief Date
Hazardous Waste Section

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PART I - STANDARD CONDITIONS

A. EFFECT OF PERMIT

The Permittee is required to conduct post-closure care and corrective action requirements 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 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.

B. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR 270.41, 270.42, and 270.43 as adopted in 15A NCAC 13A .0113. 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.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

D. 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. Any permit noncompliance constitutes a violation of N. C. Hazardous Waste Management Rules 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.

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 180 days before this permit expires. The Permittee must continue post-closure monitoring and corrective action after the expiration date of this Permit unless permission to cease such activity has been granted by the Department.

3. Permit Review Period. This permit shall be reviewed by the Secretary of the Department of Environmental Quality or his designee (hereafter referred to as Department) five (5) years after the date of issuance and modified as necessary as required under 40 CFR 270.50(d) as adopted in 15A NCAC 13A .0113.

4. Permit Expiration. This permit and all conditions therein 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 (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.

5. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for a 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.

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.

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) 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.

8. Duty to Provide Information. The Permittee shall furnish to the Department, within a reasonable time, any relevant information which the Department requests 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.

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.

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 of the groundwater to be analyzed must be an appropriate method and as stated in the ground-water sampling and analysis plan located in Module E of Volume 1 of the Application. Laboratory methods must be those specified in Appendix A of this permit.

   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, 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 or record. These periods 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.

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.

11. Reporting Planned Changes. The Permittee shall give notice to the Department as soon as possible of any planned physical 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 referenced in Appendix D at the permitted facility as defined in 40 CFR 270.2 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 the requirements of this permit.

13. Transfer of Permits. This permit may be transferred to a new owner or operator only if it is modified or revoked and reissued pursuant to 40 CFR 270.40, 270.41 and 270.42 as adopted in 15A NCAC 13A .0113. Before transferring ownership or operation of the facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of 40 CFR 264 as adopted in 15A NCAC 13A .0109 and 40 CFR 270 as adopted in 15A NCAC 13A .0113.

14. 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) days following each schedule date.

15. Twenty-four Hour Reporting. The Permittee shall report to the Department any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. The following shall be included as information which must be reported orally within 24 hours:

a. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

b. 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. 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.

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.

16. 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.D.15.

17. Other Information. When the Permittee becomes aware that he failed to submit any relevant facts in the permit application, or submitted incorrect information in a permit application or in any report to the Department, the Permittee shall promptly submit such facts or information.

E. SIGNATORY REQUIREMENTS

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

F. DOCUMENTS TO BE MAINTAINED AT FACILITY SITE

The Permittee shall maintain at the facility, until post-closure and all RCRA corrective action activities are completed and certified by an independent registered professional engineer, the following documents and amendments, revisions and modifications to these documents:

1. Cost estimate for closure, post-closure care and corrective action submitted in accordance with 40 CFR 264.142(d), 264.144, 264.100, and 264.101 as adopted in 15A NCAC 13A .0109 and Vol 1, Module I; Vol. 2 Appendix 14 and 15 of the Application;

2. Operating record required by 40 CFR 264.73 as adopted in 15A NCAC 13A .0109, and Conditions I.D.10., III.G., and IV.I. of this permit;

3. The groundwater sampling and analysis plan and Post-Closure Plan and Corrective Measures Plan Vol. 1, Module E and I; and Vol. 2, Appendix 18 of the Application and Condition III.G., IV.H. and V.H of the permit;

4. Inspection schedules developed in accordance with 40 CFR 264.15(b) as adopted in 15A NCAC 13A .0109 and Vol. 2, Appendix 18 of the Application;

5. Groundwater monitoring records necessary to develop reports required by 40 CFR 264.100 as adopted in 15A NCAC 13A .0109 and this permit;

6. Documentation of compliance with 40 CFR 264.116, 264.119, and 264.120 as adopted in 15A NCAC 13A .0109 and this permit;

7. A survey plat and record of the type, location and quantity of hazardous waste or hazardous constituents disposed of within the two landfill areas that formerly contained two waste methyl ethyl keytone underground storage tanks - Hazardous Waste Management Unit (HWMU-1), three raw product storage tanks designated G-3, G-4, and G-5 (HWMU-2) and a magnesium burn pit and drum storage area (HWMU-3) as required by 40 CFR 264.119 as adopted in 15A NCAC 13A .0109 and this permit; and

8. All reports and documentation of compliance with the post-closure plan as specified in 40 CFR 264.118(b)(1) and (2) as adopted in 15A NCAC 13A .0109 and this permit during the post-closure period and corrective action as specified in 40 CFR 264.100 and .101, as adopted in 15A NCAC 13A .0109 and as defined in Part I.I of this permit.

All amendments, revisions and modifications to any plan or cost estimates required by this permit shall be submitted to the Department for approval and/or permit modification.

G. 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 North Carolina Hazardous Waste Section. The report must cover facility activities during the previous calendar year.

H. DOCUMENTS TO BE SUBMITTED

The Permittee shall submit three (3) copies of any documents described below:

1. If the Permittee chooses to perform the statistical evaluation as described in Condition IV.F.8., the Permittee shall submit the statistical evaluation not later than sixty (60) days after completion of the sampling.

2. As future changes in the monitoring program potentially develop or are proposed over time, the Permittee shall submit an updated Remediation System Operation Maintenance & Contingency Plan with As-built drawings (O&M Plan); boring logs and other documentation as applicable. This submittal shall occur no later than 60-days after permit modification issuance or receipt of other applicable written approvals by the Hazardous Waste Section (HWS).

    a) If any modifications or changes occur to the sampling and analysis regimen currently approved at the site, including the effectiveness or related to the monitoring wells, extraction wells, sampling schedule/frequency, or constituents analyzed a new sampling and analysis plan shall be submitted to this office for approval and implemented following receipt of approval by the HWS.
    b) If changes to the Contingency Plan or Operations and Maintenance Plan are proposed submittal of such changes to this office are required for approval.
    c) Groundwater and surface water sampling reports shall be submitted to this office within 90 days following completion of field activities.

3. Following written approval by this office, the Permittee shall submit a verification that any new, replaced, or relocated POC or background wells have been installed no later than 45 days after approval of the well design described in Condition IV.E (if applicable).

I. 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 15A NCAC 13A, G.S. 130A-Article 9, the permit, or EPA guidance documents or 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, 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.

J. 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.

K. 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.L. 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.

L. 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.

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.L.1. to meet or confer to resolve any disagreement.

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.

4. If agreement is not reached within the thirty (30) day period, the Department will notify the Permittee in writing of his/her 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 of its 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.

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.

M. Two (2) paper copies and one (1) electronic copy of all reports and plans shall be provided by the Permittee to the Department at the following address:

   Ms. Julie S. Woosley, Chief
   Hazardous Waste Section
   Waste Management Division
   1646 Mail Service Center
   Raleigh, NC 27699-1646

Electronic data shall be in MS Word, Access, or, a comma delimited format. Data files shall also include a meta data file describing the fields in the data file. Plans shall be electronic to the most reasonable extent possible.

PART II - GENERAL FACILITY CONDITIONS

A. Authorized Waste. The Permittee is required to monitor and treat ground water and implement post-closure care and corrective action of the closed waste MEK underground storage tank area (HWMU-1), the G-3, G-4, and G-5 product tank area (HWMU-2); and the magnesium burn pit and drum storage area (HWMU-3) in accordance with the conditions specified in this permit.

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 constituents to air, soil or surface water which could threaten human health or the environment.

C. Security. The Permittee shall comply with the security provisions of 40 CFR 264.14(b) and (c) as adopted in 15A NCAC 13A .0109 and Module I of the Application.

D. General Inspection Requirements. The Permittee shall follow the inspection schedule as described in Vol. 2, Appendix 18 of the Application and shall comply with 40 CFR 264.15(c) and (d) as adopted in 15A NCAC 13A .0109.

E. Record Keeping and Reporting.

1. Operating Record. The Permittee shall maintain a written operating record at the facility in accordance with 40 CFR 264.73(a), and (b) as described in the groundwater sampling and analysis plan as adopted in 15A NCAC 13A .0109, and as described in the ground-water sampling and analysis plan.

2. Biennial Report. The Permittee shall comply with the biennial report requirements of 40 CFR 264.75 as adopted in 15A NCAC 13A .0109.

3. Post-Closure and Corrective Action Cost Estimate. The most recent estimate for closure, post-closure care, investigation, and corrective action under 40 CFR 264.142(d), 264.144, 264.100 and 264.101(b) as adopted in 15A NCAC 13A .0109, must be submitted each year in accordance with 40 CFR 264.145 as adopted in 15A NCAC 13A .0109.

F. Post-Closure. The Permittee shall monitor, maintain, and perform post-closure care of the facility as described in Module I and Vol. 2, Appendix 13 & 18 of the Application, and as required under 40 CFR 264.117 and 264.310 as adopted in 15A NCAC 13A .0109.

G. The Permittee shall perform Corrective Action as required under 40 CFR 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 and the approved remedy in V.I and V.M of the permit and in Vol. 1 Module E, and Vol. 2, Appendix 17 & 18 of this permit application.

H. Cost Estimate for Post-Closure. The Permittee's current post-closure cost estimate, prepared in accordance with 40 CFR 264.144(a) as adopted in 15A NCAC 13A .0109, is specified in Vol. 2 Appendix 14 of the Application.

1. The Permittee must annually adjust the post-closure cost estimate for inflation within thirty (30) days after the close of the Permittee's fiscal year as required by 40 CFR 264.144(b) and as adopted in 15A NCAC 13A .0109.

2. The Permittee must revise the post-closure cost estimate whenever there is a change in the facility's Post-Closure Plan as required by 40 CFR 264.144(c) as adopted in 15A NCAC 13A .0109.

3. The Permittee must keep at the facility the latest post-closure cost estimate as required by 40 CFR 264.144(d) as adopted in 15A NCAC 13A .0109.

4. The Permittee shall amend the cost estimate to include cost of operation and maintenance of any ground-water monitoring or corrective action programs that may be implemented in the future in lieu of the monitoring requirements in this permit.

I. Financial Assurance for Facility Post-Closure. The Permittee shall demonstrate continuous compliance with 15A NCAC 13A .0109(i) and 40 CFR 264.145 as adopted in 15A NCAC 13A .0109, or where applicable with 40 CFR 264.146, 264.149, 264.150, and 264.151 as adopted in 15A NCAC 13A .0109 and State Rule .0109(i) by providing documentation of financial assurance in at least the amount of the cost estimates required by Condition II.H. and Vol. 2, Appendix 14 of the Application or the most recently approved cost estimate.

The financial mechanism used shall be that instrument specified in Vol. 2, Appendix 15 of the Application. The Permittee may propose using a different mechanism by submitting a new financial instrument to the Department for approval. The Permittee must submit this documentation no later than sixty (60) days prior to the effective date of the proposed change. The existing financial mechanism shall remain in force until the change is approved.

J. Cost Estimate for Corrective Action.

1. The Permittee shall prepare a remedial strategy and a cost estimate for the completion of any corrective action required under this permit for solid waste management units in order to provide financial assurance for completion of corrective action as required under 40 CFR 264.90(a)(2) and 264.101(b) as adopted in 15A NCAC 13A .0109. The remedial strategy shall be a plan for remedies for the adversely impacted areas at the facility and beyond the facility boundary. The level of detail and specificity related to the remedial technologies being considered for the facility shall increase as the facility obtains more information through facility characterization. The cost estimate will be based upon the cost of assessment of soil and groundwater and the installation, operation, inspection, monitoring, and maintenance of the corrective action system for remediation of contaminated soil and groundwater to meet the requirements of 40 CFR 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 and this permit. Such cost estimate will include the full cost (100%) of corrective action as defined by Part I.I of this permit.

2. When required, the Permittee shall submit the remedial strategy and cost estimate for completion of corrective action required under 40 CFR 264.90(a)(2), 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 and this permit within one hundred eighty (180) days of the effective date of this permit (as provided in Appendix 14 of the 2017 permit renewal application).

3. The Permittee shall annually adjust the cost estimate for inflation sixty (60) days prior to the anniversary date of the establishment of the financial assurance mechanism unless using a financial test or corporate guarantee, in which case the estimate shall be updated thirty (30) days after the close of the firm's fiscal year.

4. The Permittee shall submit cost adjustments for modifications to the corrective action plan to the Section within thirty (30) calendar days after receiving approval of the modification if the change increases the cost of corrective action.

K. Financial Assurance for Corrective Action.

1. The Permittee shall demonstrate continuous compliance with 40 CFR 264.90(a)(2) and 264.101 as adopted in 15A NCAC 13A .0109 by providing documentation of financial assurance using a mechanism described in 40 CFR 264.151 and 264.145 as adopted in 15A NCAC 13A .0109 or a mechanism described in 15A NCAC 13A .0109(i) in at least the amount of the cost estimate required under Condition II.J., or, for an amount agreed upon by the Department.

2. The Permittee shall submit financial assurance for the full cost of corrective action as required under 40 CFR 264.90(a)(2), 264.100 and 264.101 as adopted in 15A NCAC 13A .0109 no later than sixty (60) days after the approval of the cost estimate described in II.J of this permit.

3. Only the mechanisms described in 15A NCAC 13A .0109(i) may be used for financial assurance for corrective action. References to regulatory requirements for "closure and/or post-closure care" shall be replaced with the phrase "closure, post-closure care, and/or corrective action."

L. Incapacity of Owners or Operators, Guarantors, or Financial Institutions.

The Permittee shall comply with 40 CFR 264.148 as adopted in 15A NCAC 13A .0109 whenever necessary.

M. Special Conditions.

1. When a discrepancy exists between the wording of an item in the Application and this permit, the permit requirements take precedence over the Application.

2. When a discrepancy exists between the RCRA Facility Assessment (RFA) report (attached as part of the permit) and this permit as to the future requirements to be taken at the facility, the permit requirements take precedence over the requirements proposed in the report.

3. It is the policy of the HWS, under General Statute 143B-279.9 and 143B-279.10, that RCRA facilities remediate to unrestricted-use standards for all environmental media contaminated by hazardous wastes or hazardous waste constituents. Unrestricted-use standards for ground water are the North Carolina 2L groundwater (2L) standards or background soil concentrations which can be determined using the HWS Background Guidance Document. The Permittee shall submit a signed and fully executed land use restrictions (LUR) document and site plat on the entire property to the NC Hazardous Waste Section within 180-days of the signed and duly executed date of this permit. Templates of LUR can be obtained upon request from the NC Hazardous Waste Section.

PART III - POST-CLOSURE CARE FOR THE REGULATED UNIT(S)

A. APPLICABILITY

The conditions of this Part apply to the closed MEK underground storage tank area (HWMU-1), the G-3, G-4, and G-5 product tank area (HWMU-2), and the magnesium burn pit and drum storage area (HWMU-3), as specified in 40 CFR 264.110(b)(2) as adopted in 15A NCAC 13A .0109.

B. POST-CLOSURE CARE PERIOD

Post-closure care procedures as described in Vol. 1 Module I, and Vol. 2 Appendix 13 and 18 of the Application and Part IV of this permit shall continue throughout the effective period of this permit as specified in 40 CFR 264.117(a)(1) as adopted in 15A NCAC 13A .0109, unless otherwise modified under 40 CFR 264.117(a)(2) as adopted in 15A NCAC 13A .0109.

C. GROUNDWATER MONITORING AND CORRECTIVE ACTION FOR THE REGULATED UNIT(S)

During the post-closure period the Permittee shall comply with the requirements of 40 CFR 264.91 through 264.100 as adopted in 15A NCAC 13A .0109 as specified under Part IV of this permit for purposes of detecting, characterizing, and responding to releases of hazardous constituents to the uppermost aquifer for the closed areas as described in Vol. 1, Module E and in Appendices 9-12 of this Application.

D. POST-CLOSURE CARE FOR THE REGULATED UNIT(S)

1. The Permittee shall monitor and maintain the area(s) that is(are) closed pursuant to 40 CFR Subpart G after January 26, 1983, for a minimum of thirty (30) years in accordance with Condition II.F. and as required under 40 CFR 264.117-120, 264.228, and 264.310 as adopted in 15A NCAC 13A .0109 and as described in the post-closure plan located in Vol. 1 Module I, and Vol. 2 Appendix 13 and 18 of the Application.

2. The Permittee shall provide and maintain the items required by Conditions IV.G.8. and IV.G.9. of this permit as to the operation and maintenance of the remedial action system.

E. FINANCIAL ASSURANCE FOR POST-CLOSURE FOR THE REGULATED UNIT(S)

The Permittee shall not reduce the amount of Financial Assurance for Post-Closure Care below the approved amount without demonstration as specified in the North Carolina Hazardous Waste Section Guidance on Post-Closure Financial Assurance. The Permittee shall maintain compliance with Conditions II.H. and II.I, in the event of any revisions to the post-closure cost estimate due to additional post-closure care requirements. The Permittee shall amend the cost estimate to include cost of operation and maintenance of any ground-water monitoring or corrective action programs that may be implemented in the future in lieu of the monitoring requirements set forth in Part IV of this permit.

F. FINANCIAL ASSURANCE FOR CORRECTIVE ACTION FOR THE REGULATED UNIT(S)

The Permittee shall provide financial assurance for completion of corrective action for all regulated land disposal units that received hazardous waste after July 26, 1982.

G. REPORTING, RECORD KEEPING, AND RESPONSE

The Permittee shall enter all monitoring, testing, analytical data, inspection, and maintenance reports obtained pursuant to Condition IV.I. in the operating record, as required by 40 CFR 264.73(b)(6) as adopted in 15A NCAC 13A .0109.

PART IV - GROUNDWATER PROTECTION FOR RELEASES FROM THE REGULATED UNIT(S)

A. APPLICABILITY

The requirements of this part apply to the closed areas as described in Vol. 1, Module B, Appendix 1, and Vol. 2, Appendices 5, 6, and 7 of the Application, and, as specified under 40 CFR 264.90 as adopted in 15A NCAC 13A .0109. These closed areas include HWMU #1 (Former waste MEK tank area; former G-1 and G-2 tanks); HWMU #2 (Former G-3, G-4, and G-5 tank area), and HWMU #3 (Former magnesium burn pit and storage area).

B. GROUNDWATER PROTECTION STANDARD

The groundwater protection standard as required under 40 CFR 264.92 as adopted in 15A NCAC 13A .0109 shall consist of Table IV-I below, which lists the hazardous constituents and their respective concentration limits as required under 40 CFR 264.93, and 264.94, respectively.

TABLE IV-I GROUNDWATER PROTECTION STANDARDS

Hazardous Constituents		Concentration Limit
ORGANICS	**Common Name**	**Concentration Limit (2L)**
Benzene		1 ug/L*
Chloroethane		3000 ug/L
Chloroform		70 ug/L
1,1-Dichloroethane		6 ug/L
1,2-Dichloroethane		0.40 ug/L
1,1-Dichloroethene	(1,1-dichloroethylene)	350[1] ug/L
cis-1,2-Dichloroethene		70 ug/L
trans -1,2-Dichloroethene		100 ug/L
Methylene chloride	(Dichloromethane)	5 ug/L
Tetrachloroethene	(Perchloroethylene; aka PCE)	0.7 ug/L
1,1,1-Trichloroethane		200 ug/L
1,1,2-Trichloroethane	(Vinyl Trichloride; aka 1,1,2-TCA)	0.6[2] ug/L
Trichloroethene	(Trichloroethylene; aka TCE)	3.0 ug/L

*Benzene only needs to be sampled under the terms listed in Condition IV.F.8 of the permit

Temperature, Specific Conductance, pH, Water level, Field Measurements

[1] *= 1,1 – DCE was adopted by the North Carolina EMC in accordance with 15A NCAC 2L .0202(f). For private drinking water wells or public water systems (only) that are impacted by 1,1-DCE the applicable standard is 7ug/L as shown in the Groundwater Standards Table found on the DEQ website - in accordance with 15A NCAC 2L .0202*

[2] *= NC2L Interim Maximum Allowable Concentration (established August 1, 2010)*

C. POINTS OF COMPLIANCE

The point of compliance for the closed area shall be well number(s): MW-2sr (HWMU-1), MW-1sr (HWMU-2), and MW-8sr (HWMU-3) as described in Condition IV.E. and Appendix B and as required by 40 CFR 264.95 and 264.99(a)(3) as adopted in 15A NCAC 13A .0109.

D. COMPLIANCE PERIOD

The compliance period for HWMU-1 (Waste MEK underground storage tank), HWMU 2 (G-3, G-4, G-5 Product Tank Area), and HWMU-3 (magnesium burn pit and drum storage area) shall be defined to begin with the effective date of the permit and continue until the groundwater protection standard, specified in Condition IV.B., has not been exceeded for a period of three (3) consecutive years and the corrective action under 40 CFR 264.100 as adopted in 15A NCAC 13A .0109 has been terminated as specified under Condition IV.J. of this permit.

E. GROUNDWATER MONITORING SYSTEM

The Permittee has constructed and will maintain a groundwater monitoring system to comply with the requirements of 40 CFR 264.97, 264.99, and 264.100 as adopted in 15A NCAC 13A .0109.

The groundwater monitoring system described below is designed to monitor groundwater quality at the POC wells, between the compliance points and the property boundary, and at nearby surrounding properties. In addition, the system is designed to monitor the effectiveness of the corrective action program.

Description of the Monitoring System

A total of 38 monitoring wells including eight (8) extraction wells have been installed or are designated as monitoring or extraction wells during various phases of investigations at the facility. Key changes to the previously approved 2007 groundwater monitoring system as requested by the facility, and, as accepted by the HWS, are included below.

Following the list of changes, a summary table entitled (*Summary of Corrective Action Monitoring Program*) is provided which describes specifics related to the new, approved monitoring plan by location, type, by individual wells (and sampling locations), and by constituents (with frequency of monitoring).

Compliance Well Sampling Requirements

a) Waste MEK Tank Area – HWMU-1;
MW-2sr as the point of compliance well, and
MW-11s;

b) G-3, G-4, and G-5 Tank Area; HWMU-2;
MW-1sr as the point of compliance well,
MW-29s

c) Magnesium Burn Pit and Drum Storage Area – HWMU-3;
MW8sr as the point of compliance well;
MW-8i;
MW-19s

These above wells shall be maintained at the locations specified on the drawings contained in the various sections of the permit (Vol. 1 Module E).

Additionally, the following wells shall be sampled for Plume Assessment/Corrective Action Effectiveness Monitoring;

d) Plume Perimeter Monitoring Wells

MW-13s	MW-22d	MW-31i
MW-13i	MW-23i	MW-34d
MW-17i	MW-24s	DD
MW-18i	MW-24i	
MW-22s	MW-31s	

e) Private Residential Wells to be Monitored

Mr. Coleman Lee
Mr. George Harris

Effectiveness Well Sampling Requirements

f) Corrective Action Effectiveness/Interior Plume Wells

CW-1	MW-4i	MW-7s
EW-4	MW-6i	MW-16sr
MW-4s	MW-6s	Outfall 001

Groundwater Extraction Well Sampling Requirements

g) Extraction Wells

CW-2	EW-5	MW-16i
EW-1	MW-10i	
EW-3	MW-15i	

Point of Compliance Wells

Appendix IX Requirements
Wells MW-1sr, MW-2sr, and MW-8sr will be sampled during each annual monitoring event. In addition, these wells will be sampled for Appendix IX constituents every five years at least six months prior to the permit anniversary date.

These above wells shall be maintained at the locations specified on the drawings contained in the various sections of the permit application (Vol. 1 Module E, including Figure E-10 and, Table E-7).

A cumulative summary table entitled “Summary of Corrective Action Monitoring Program” is provided below which describes the new, approved monitoring system.

Summary of Corrective Action Monitoring Program

Purpose of Monitoring Location	Location ID	Annual Sampling													Every 5 Years
		CHLORO-ETHANE	CHLOROFORM	1,1-DICHLOROETHANE	1,2-DICHLOROETHANE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	METHYLENE CHLORIDE	TETRACHLOROETHENE	1,1,1-TRICHLOROETHANE	1,1,2-TRICHLOROETHANE	TRICHLOROETHENE	BENZENE	Appendix IX
NC 2L Standard (ug/L)		**3000**	**70**	**6**	**0.4**	**7 / 350 [1]**	**70**	**100**	**5**	**0.7**	**200**	**0.6 [2]**	**3**	**1**	**NA**
Waste MEK Tank Area HWMU 1	MW-2SR*	X	X	X	X	X	X	X	X	X	X	X	X		X
	MW-11S	X	X	X	X	X	X	X	X	X	X	X	X		
G-3, G-4, and G-5 Tank Area HWMU 2	MW-1SR*	X	X	X	X	X	X	X	X	X	X	X	X		X
	MW-29S	X	X	X	X	X	X	X	X	X	X	X	X	X	
Magnesium Burn Pit and Drum Storage Area HWMU 3	MW-8SR*	X	X	X	X	X	X	X	X	X	X	X	X		X
	MW-8I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-19S	X	X	X	X	X	X	X	X	X	X	X	X		
Plume Perimeter Monitoring Wells	MW-13S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-13I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-17I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-18I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-22S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-22D	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-23I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-24S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-24I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-31S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-31i	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-34D	X	X	X	X	X	X	X	X	X	X	X	X		
	Dockery Well	X	X	X	X	X	X	X	X	X	X	X	X		
Extraction Wells	CW-2	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-1	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-3	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-5	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-10I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-15I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-16IR	X	X	X	X	X	X	X	X	X	X	X	X		
Corrective Action Effectiveness/Interior Plume Wells	CW-1	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-4	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-4S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-4I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-6S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-6I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-7S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-16SR	X	X	X	X	X	X	X	X	X	X	X	X		
	Outfall 001	X	X	X	X	X	X	X	X	X	X	X	X		
Private Residential Wells	Coleman Lee	X	X	X	X	X	X	X	X	X	X	X	X		
	George Harris	X	X	X	X	X	X	X	X	X	X	X	X		
Total		**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**1**	**3**

Notes:

NC 2L Standard from the April 1, 2013 update

*MW-2sr is the POC well for HWMU 1; MW-1sr is the POC well for HWMU 2; and, MW-8sr is the POC well for HWMU 3

[1] 1,1-DCE was adopted by the EMC in accordance with 15A NCAC 2L 0202 (f) and is above the federal MCL. Where a private drinking water well or public water system is impacted by 1,1-DCE, the applicable standard is 7ug/L, in accordance with 15ANCAC 2L.0202

[2] - NC 2L Interim Maximum Allowable Concentration (established August 1, 2010)

The Permittee shall submit plans for the design, location, installation and development of any type of additional monitoring wells (Point of Compliance, Effectiveness, Corrective Action, routine Monitoring, etc…) which may be required in the future as applicable, and Permittee shall be responsible for properly maintaining these wells to ensure that they serve as suitable mechanisms that are capable of extracting representative samples of the groundwater for sampling and analytical purposes. This includes purposes related to effectiveness and determination of progress on corrective actions as required by 40 CFR 264.100(d) as adopted in 15A NCAC 13A .0109. The plans for the design, location, installation, and development of any additional wells shall be submitted to the Department for approval at least thirty (30) days prior to the desired installation date.

F. MONITORING REQUIREMENTS

The Permittee shall establish and implement a groundwater monitoring program to demonstrate the effectiveness of the corrective action program. Groundwater monitoring shall be conducted in conformance with the requirements for compliance monitoring considering 40 CFR 264.92, 264.99 and 264.100 as adopted in 15A NCAC 13A .0109. The Permittee shall determine groundwater quality as follows:

1. The Permittee shall collect, preserve, and analyze groundwater samples pursuant to Condition IV.H.

2. The Permittee shall determine the concentration of hazardous constituents specified in Condition IV.B., pH, conductivity, temperature, and water level of the groundwater at each well as described in Appendix A throughout the compliance period including any extension to the compliance period as defined under Condition IV.D.

3. To demonstrate the effectiveness of the corrective action program, the Permittee shall monitor wells as specified in Vol. 1, Module E of the permit renewal application. The Permittee shall comply with any additional monitoring specified by the Department as required by 40 CFR 264.100(d) as adopted in 15A NCAC 13A .0109.

4. The Permittee shall record the water level in all wells being sampled before the groundwater is sampled each time in accordance with Conditions IV.F.2.

5. The Permittee shall determine the groundwater flow rate and direction in the uppermost aquifer at least annually as required under 40 CFR 264.99(e) as adopted in 15A NCAC 13A .0109. This information shall be submitted in the form of a groundwater potentiometric map, and groundwater velocity calculations, along with all the data used to make these determinations.

6. The Permittee shall analyze samples from the point of compliance well(s), specified under Condition IV.C., all constituents in 40 CFR 264 Appendix IX, or a reduced set of constituents approved by the Department, as adopted in 15A NCAC 13A .0109 and any other constituents specified by the Department every five years to determine whether additional hazardous constituents are present in the uppermost aquifer. The analyses must be submitted within 120 days of sampling. If the Permittee finds additional constituents present (one not listed in Condition IV.B.), he or she may re-sample within one (1) month and repeat the analysis. If the second analysis confirms the presence of new constituents their concentrations shall be reported to the Department within seven (7) days after completion of the analyses.

7. The Permittee may be required to determine whether there is a statistically significant increase, for each parameter identified in Condition IV.B., over the concentration limit for that parameter each time the concentration of hazardous constituents is monitored in groundwater at the compliance point pursuant to Condition IV.F.2. In determining whether such an increase has occurred, the Permittee must compare the groundwater quality at each monitoring well specified in Condition IV.C. in accordance with the procedures specified in Condition IV.H. When evaluating the monitoring results the Permittee shall use the statistical procedures specified in Vol. 1, Module E of the Application, in accordance with 40 CFR 264.97(h)(1) as adopted in 15A NCAC 13A .0109

NOTE: If inspection of the data clearly shows that hazardous constituent levels are above the concentration limits specified in Table IV-I, the Permittee may elect not to perform statistics.

8. The Permittee shall analyze MW-29s for all parameters listed in Table IV-I, including benzene, until benzene is no longer detected for a period of three years consecutively, At that time, upon written notification from the Permittee to the Department, and the Department's subsequent written acceptance, MW-29s will no longer need to be sampled, and benzene may be removed from the groundwater protection standards.

9. If the Permittee chooses to perform a statistical evaluation, the Permittee shall perform the statistical evaluation required by Condition IV.F.8. within sixty (60) days after completion of sampling.

10. If analysis of samples taken in accordance with Conditions IV.F.2. and IV.F.7. are below the ground-water standard as specified under Condition IV.B. at the point of compliance for three (3) consecutive years after the compliance period or corrective action period, whichever is greater, then the Permittee may submit an application for a permit modification pursuant to 40 CFR 270.42 as adopted in 15A NCAC 13A .0109 to establish an alternate groundwater monitoring program.

G. CORRECTIVE ACTION PROGRAM FOR THE REGULATED UNIT(S)

1. The Permittee shall continue corrective action for the Regulated Unit(s) as required by Appendix C and Vol. 1, Module L, and Vol. 2 Appendices 17, and 18 of the Application as stipulated by 40 CFR 264.100(c) as adopted in 15A NCAC 13A .0109.

2. The Permittee shall conduct a corrective action program for the Regulated Unit(s) to remove or treat in place any hazardous constituents under 40 CFR 264.93 as adopted in 15A NCAC 13A .0109 (Condition IV.B.) that exceed the concentration limit under 40 CFR 264.94 as adopted in 15A NCAC 13A .0109 in groundwater between the compliance point under 40 CFR 264.95 as adopted in 15A NCAC 13A .0109 (Condition IV.C.) and the downgradient facility property line; and beyond the facility boundary as required under 3004(v) of RCRA, as amended, and 40 CFR 264.101(c) as adopted in 15A NCAC 13A .0109, unless the Permittee can demonstrate to the satisfaction of the Department that despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such action, or such action is not necessary to protect public health or the environment.

3. The corrective action program is as described in the plans and specifications found in Vol. 1, Module E, L, and Vol. 2 Appendices 17 and 18 of the Application and as required by 40 CFR 264.100(e) as adopted in 15A NCAC 13A .0109. The equipment used for the corrective action program shall be known as the remedial action system.

4. The influence of the remedial action system shall, at a minimum, extend beyond the boundaries of the plume as identified in Vol. 1, Module E of the Application. The remedial action system required under Condition IV.G.3. shall be modified if it does not meet this requirement.

5. The Permittee shall continue to submit data supporting the projected vertical and horizontal influence of the extraction system to the Department with the submittal of the annual effectiveness monitoring report.

6. The Permittee shall submit a revised post-closure cost estimate as required by Conditions II.H., II.I., II.J and II.K for all additional corrective action and monitoring required by Part IV of this permit and Appendices A, B, and C. The Permittee shall submit this revised cost estimate within thirty (30) days of the remedial action system design final approval.

7. The Permittee shall treat, store, and dispose of all contaminated groundwater in accordance with all applicable federal, state and local laws. At a minimum, the Permittee shall obtain the required NPDES or POTW approval from the appropriate authority.

8. It is recognized that the Permittee has submitted an updated Remediation Systems Operation Maintenance & Contingency Plan (O&M Plan) as part of the 2017 Permit renewal application with respect to the operation and maintenance of the remedial action system. Permittee shall update this document and submit said changes to the HWS as needed, if changes are realized or required. This plan included (and shall subsequently always include) the following components:

    a. Personnel Training - The Permittee shall prepare and implement a personnel training plan sufficient to train any personnel associated with the remedial action system.

    b. Contingency Plan - The Permittee shall prepare and implement, if necessary, a plan to be followed if there is a release from the remedial action system.

    c. Required Equipment - The Permittee shall include in a plan and provide, at all times, the necessary equipment to carry out the required contingency plan. The plan should also include the required testing and maintenance of equipment.

    d. Abandonment Plan - The Permittee shall include an abandonment plan for implementation following the completion of corrective action for the remedial action system.

    e. Cost Estimates for Abandonment - An estimate of abandoning the remedial action system should be provided for as a portion of the revised post-closure cost estimate required by Condition II.H.

9. The Permittee shall test and maintain the remedial action system as required in Appendix C of this permit.

H. SAMPLING AND ANALYSIS PROCEDURES

The Permittee shall attempt to make a good faith effort to notify the NC Hazardous Waste Section project manager at least two weeks prior to sampling. The Permittee shall use the following techniques and procedures when obtaining samples and analyzing samples from the groundwater monitoring wells described in Condition IV.E.:

1. Samples shall be collected by the techniques described in the groundwater sampling and analysis plan found in Vol. 1, Module E of the Permit Renewal Application and Appendix A of this permit.

    These procedures are also provided in the “RAS O&M Plan” (Appendix 18) of the 2017 Permit Renewal Application. A summary of the analytical procedures is provided on Table E-7 of the 2017 Permit Renewal Application.

2. Samples shall be preserved and shipped (when shipped off-site for analysis) in accordance with the procedures specified in the Groundwater Sampling and Analysis Plan (Vol. 1, Module E) of the Permit Renewal Application; and Appendix A of this permit. These procedures are also provided in the “RAS O&M Plan” (Appendix 18) of the 2017 Permit Renewal Application. A summary of the analytical procedures is provided on Table E-7 of the 2017 Permit Renewal Application.

3. Samples shall be analyzed according to the procedures specified in Appendix A of this permit and are also provided in the “RAS O&M Plan” (Appendix 18) of the 2017 Permit Renewal Application. A summary of the analytical procedures is provided on Table E-7 of the 2017 Permit Renewal Application. Any subsequent procedures specified by DEQ will be required as deemed necessary by the Department;

4. Samples shall be tracked and controlled using the chain of custody procedures specified in Vol. 1, Module E containing the groundwater sampling and analysis plan;

5. Samples shall be obtained using bailers or pumps and other sampling equipment that will not significantly interfere with the analysis; and

6. The sampling and analysis plan shall be updated to reflect any changes approved or required by the Department.

I. REPORTING, RECORD KEEPING, AND RESPONSE

1. The Permittee shall enter all monitoring, testing, and analytical data obtained pursuant to Condition IV.H. in the operating record, as required by 40 CFR 264.73(b)(6) as adopted in 15A NCAC 13A .0109.

2. The Permittee must report in writing annually to the Department, and within 90-days of sampling, on the monitoring required in Part IV.F of the permit and the effectiveness of the corrective action program for the Regulated Unit(s), as required by 40 CFR 264.100(g) as adopted in 15A NCAC 13A .0109. This report shall also be made part of the operating record and shall include all monitoring, testing, and analytical data obtained under Conditions IV.F., IV.G., and IV.H. This report shall also include proposals for improvements of the corrective action system in order to maintain compliance with Conditions IV.E. and IV.G. *Note: Reporting requirements pertaining to the Effectiveness Evaluation Reports is detailed in Section E-8d (4) of the 2017 Permit Renewal Application.*

3. The Permittee shall report concentrations of any additional Appendix IX constituents (identified pursuant to Condition IV.E and not listed in Table IV-I) to the Department, and within seven (7) days after completion of analysis, as specified in 40 CFR 264.99(g) as adopted in 15A NCAC 13A .0109.

4. The Permittee shall report concentration levels for constituents identified in Appendix A for wells identified in Appendix A to the Department within sixty (90) days after completion of the groundwater sampling event. *Note: Reporting requirements pertaining to the Groundwater Sampling Reports is detailed in Section E-8d (4) of the 2017 Permit Renewal Application.*

J. PERMIT MODIFICATION

1. If the Permittee determines that the corrective action program, required by this permit, no longer satisfies the requirements of the regulations, an application for a permit modification must be submitted within ninety (90) days to make any appropriate changes to the program, which will satisfy the regulations.

2. The Permittee must request a permit modification as described under Condition IV.F.9. if it is desired to make a change in the groundwater monitoring program following the completion of the necessary requirements.

3. If the Permittee determines that the compliance/corrective action monitoring program, required by this permit, no longer satisfies the requirements of the regulations, an application for a permit modification must be submitted within ninety (90) days to make any appropriate changes to the program, which will satisfy the regulations.

4. The Permittee must request a permit modification to include the extension of the corrective action system following the completion of the actions required under Condition IV.G. and Appendix C of this permit.

K. DUTY OF PERMITTEE

The Permittee must assure that monitoring and corrective action measures necessary to achieve compliance with the groundwater protection standard under 40 CFR 264.92 as adopted in 15A NCAC 13A .0109 are taken during the term of the permit.

L. SPECIAL CONDITIONS

1. The Permittee shall conduct well abandonment in accordance with Title 15 NCAC 2C well construction standards; a certification, which includes abandonment logs and which reflects the abandonment procedure, must be submitted.

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

The overall 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.

A. APPLICABILITY

The Conditions of this Part apply to:

1. The solid waste management units (SWMUs) and areas of concern (AOCs) which require further investigation are identified in Appendix D of the permit. There are no SWMUs or AOCs which require further investigation (or an RFI) at this time.

2. SWMUs identified in Appendix D which require no further investigation at this time, are addressed under the permit.

3. SWMUs identified in Appendix D which require confirmatory sampling. There are no SWMUs or AOCs which require confirmatory sampling at this time.

4. Any additional SWMUs or AOCs discovered during the course of groundwater monitoring, field investigations, environmental audits, or other means.

5. Corrective action beyond the facility boundary, if applicable. 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 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 action will be required.

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 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.

2. A "Corrective Action Management Unit" (CAMU) includes any area within a facility that is designated by the Department under 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). A CAMU shall only be used for the management of remediation wastes pursuant to implementing such corrective action requirements at the facility.

3. 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, 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.

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 groundwater.

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.

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.

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 264 Appendix IX 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.

9. The term "land disposal" means placement in or on the land except for a CAMU 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 concrete vault or bunker intended for disposal purposes.

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.

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.

12. "Remediation waste" includes all solid and hazardous wastes, and all media (including ground water, surface water, soils, and sediments) 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). For a given facility, remediation wastes originate only from within the facility boundary, but may include waste managed in implementing RCRA sections 3004 (v) or 3008 (h) for releases beyond the facility boundary.

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).

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).

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.

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, waste water treatment unit, elementary neutralization unit, transfer station, or recycling unit.

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 additional SWMUs as discovered under Condition V.A.4.

2. 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 V.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 V.E.1. or Condition V.F.1.

3. 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 under Condition V.C.1. At a minimum, the SAR shall provide the following information:

   a. Location of unit(s) on a topographic map of appropriate scale such as required under 40 CFR 270.14(b)(19) as adopted in 15A NCAC 13A .0113.

   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 wastes.

   f. All available information pertaining to any release of hazardous waste or hazardous constituents from such unit(s) (to include groundwater data, soil analyses, air, and/or surface water data).

4. Based on the results for 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 Condition V.F.1.b.

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 V.A.2. or SWMUs or AOCs identified in Condition V.A.4. for which further investigation under Condition V.C.4. was not required.

2. If the Department determines that further investigation of the SWMUs and AOCs is needed, the Permittee shall be required to prepare a plan for such investigations as outlined in Condition V.F.1.b.

E. CONFIRMATORY SAMPLING (CS)

1. The Permittee shall prepare and submit to the Department, within forty five (45) calendar days of the effective date of permit, or notification by the Department for a newly identified SWMU, a Confirmatory Sampling (CS) Workplan to determine any release from SWMUs and AOCs identified in V.A.3. and Appendix D. The CS Workplan shall include schedules of implementation and completion of specific actions necessary to determine a release. It should also address applicable requirements and affected media.

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, (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.

3. The Permittee shall implement the confirmatory sampling in accordance with the approved CS Workplan.

4. The Permittee shall prepare and submit to the Department in accordance with the approved schedule, a Confirmatory Sampling (CS)Report, within sixty (60) calendar days after approval of the CS Workplan, identifying those SWMUs and AOCs listed in Condition V.A.3. that have released hazardous waste or hazardous constituents into the environment. The CS Report shall include all data, including raw data, and a summary and analysis of the data that supports the above determination.

5. 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 V.F.1.b. The Department will notify the Permittee of any "no further action" decision.

F. RCRA FACILITY INVESTIGATION (RFI)

1. RFI Workplan(s)

a. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of the approval of the Confirmatory Sampling Report, a RCRA Facility Investigation (RFI) Workplan for those units identified in Condition V.A.1. This Workplan shall be developed to meet the requirements of Condition V.F.1.c.

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 V.C.4., Condition V.D.2. or Condition V.E.5. This RFI Workplan(s) shall be developed to meet the requirements of Condition V.F.1.c.

c. The RFI Workplan(s) shall meet the requirements of Appendix E 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 E. 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 finding. 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.

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, (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.

2. RFI Implementation

The Permittee shall implement the RFI(s) in accordance with the approved RFI Workplan(s) and Appendix E. The Permittee shall notify the Department twenty (20) days prior to any sampling activity.

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 finding;

iii. Summaries of any deviations from the approved RFI Workplan during the reporting period;

iv. Summaries of all 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 in relevant personnel;

viii. Projected work for the next reporting period.

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 V.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 V.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.

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 V.H., Appendix F 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 V.F.1.d.

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 V.G.1.b. Such interim measures may be conducted concurrently with investigations required under the terms of this permit. The Permittee may initiate interim measures by submitting an IM Workplan for approving implementation with reporting in accordance with the requirements under Condition V.G.

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.

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, (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.

2. IM Implementation

a. The Permittee shall implement the interim measures in accordance with the approved IM Workplan.

b. The Permittee shall give notice to the Department as soon as possible of any planned changes, reductions, or additions to the IM Workplan.

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 V.I. as a permit modification.

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 IM 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.

b. The Permittee shall prepare and submit to the Department, within ninety (90) calendar days of completion of interim measures conducted under Condition V.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.D.10.

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 V.H.1.b.

b. The CMS Workplan shall meet the requirements of Appendix F. 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 V.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 F. 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 3005(c)(3), 40 CFR 264.101, 264.552 as adopted in 15A NCAC 13A .0109, and 270.32(b)(2) as adopted in 15A NCAC 13A .0113. The Permittee shall implement corrective actions beyond the facility boundary as set forth in Condition V.A.5.

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, (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.

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 the Permittee has received 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 V.H.1.c.

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 V.I.

b. If the Department determines that the CMS Final Report does not fully satisfy the information requirements specified under Permit Condition V.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.

c. As specified under Condition V.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.

I. REMEDY APPROVAL AND PERMIT MODIFICATION

1. A remedy shall be selected by 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.

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 V.I.1. This modification will serve to incorporate a final remedy, including a CAMU if necessary, into the permit.

3. Within one hundred and twenty (120) calendar days after this Permit has been modified, the Permittee shall demonstrate financial assurance for completing the approved remedy.

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, Appendix H.

2. Modifications that are initiated and finalized by the Department will be in accordance with the applicable provisions of 40 CFR Part 270 as adopted in 15A NCAC 13A .0113. The Permittee may also request a permit modification in accordance with 40 CFR 270 to change the schedule of compliance.

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.D.15.

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.D.15. 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.

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. The Permittee shall revise all submittals and schedules as specified by the Department. Upon approval, the Permittee shall implement all plans and schedules as written.

2. All Workplans 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.

3. If the Permittee at any time determines that the SAR information required under Condition V.C., or RFI Workplan(s) required under Condition V.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 RFI Workplan(s) to the Department within ninety (90) calendar days of such determination.

4. All reports shall be signed and certified in accordance with 40 CFR 270.11 as adopted in 15A NCAC 13A .0113.

M. REMEDY DESCRIPTION

1. For HWMU-1, 2, and 3, the selected remedy is a site-wide ground water extraction and treatment system (air-stripping). Additionally, sampling/monitoring of the groundwater monitoring wells is part of the remedy selection for these hazardous waste management units (HWMU's).

2. For SWMU-13, the selected remedy is a reactivation and expansion of the existing soil vapor extraction (SVE) system south of the Base Distribution Center and is described in the Soil Vapor Extraction Report dated October 2005.

PART VI - WASTE MINIMIZATION

A. GENERAL REQUIREMENTS

In the event that the Permittee treats, stores, or disposes of hazardous wastes on-site where such wastes were generated, then the Permittee must comply with 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109, and Section 3005(h) of RCRA, 42 U.S.C. 6925(h), the Permittee must certify, no less often than annually that:

1. The Permittee has a program in place to reduce the volume and toxicity of hazardous waste to the degree determined by the Permittee to be economically practicable; and

2. 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.

B. WASTE MINIMIZATION RECORD KEEPING

The Permittee shall maintain copies of the certification in the facility operating record as required by 40 CFR 264.73(b)(9) as adopted in 15A NCAC 13A .0109.

C. 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.

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 VII - 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 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 268 as adopted in 15A NCAC 13A .0112. Where the Permittee has applied for an extension, waiver or variance under 40 CFR 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.

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.

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 268 Subpart E as adopted in 15A NCAC 13A .0112 are met.

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 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 concrete vault or bunker intended for disposal purposes.

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

A. GENERAL INTRODUCTION

In the June 21, 1990, Federal Register, EPA published the final rule for Phase I Organic Air Emission Standards (40 CFR Parts 264 and 265, Subparts AA and BB) for hazardous waste treatment, storage, and disposal facilities. Subpart AA contains emission standards for process vents associated with distillation fractionation, thin-film evaporation, solvent extraction, and air or steam stripping operations that process hazardous waste with an annual average total organic concentration of at least ten (10) parts per million (ppm) by weight. NOTE: SUBPART AA DOES NOT APPLY TO AIR STRIPPING OPERATIONS USED FOR CORRECTIVE ACTION PURPOSES. Subpart BB contains emission standards that address leaks from specific equipment (i.e. pumps, valves, compressors, etc.) that contains or contacts hazardous waste that has an organic concentration of at least ten (10) percent by weight.

B. ORGANIC AIR EMISSION STANDARDS

The Permittee has no units at the present time to which the Organic Air Emissions Requirements of 40 CFR 264, Subpart AA (for process vents), and/or Subpart BB (for equipment leaks) as adopted in 15A NCAC 13A .0113 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 264 as adopted in 15A NCAC 13A .0109, Subpart AA and Subpart BB regulations and is required to 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.

APPENDIX A

GROUNDWATER SAMPLING AND ANALYSIS

GROUNDWATER PROTECTION STANDARD

The groundwater protection standard as required under 40 CFR 264.92 as adopted in 15A NCAC 13A .0109 shall consist of analyzing constituents outlined below on an annual basis (Table IV-I) which lists the hazardous constituents and their respective concentration limits as required under 40 CFR 264.93, and 264.94, respectively. Additionally, the table entitled "Summary of Corrective Action Monitoring Program" found in section IV (on Page 5) of this permit outlines the requirements in tabular form.

TABLE IV-I GROUNDWATER PROTECTION STANDARDS

Hazardous Constituents	15A NCAC 02L Conc. Limit	Method*
ORGANICS	*Maximum Concentration Limit*	*Method*
Benzene	1 ug/L**	8260/70 (as applicable)
Chloroethane	3000 ug/L	8260/70 (as applicable)
Chloroform	70 ug/L	8260/70 (as applicable)
1,1-Dichloroethane	6ug/L	8260/70 (as applicable)
1,2-Dichloroethane	0.4 ug/L	8260/70 (as applicable)
1,1-Dichloroethene	350[1] ug/L	8260/70 (as applicable)
cis-1,2-Dichloroethene	70 ug/L	8260/70 (as applicable)
trans -1,2-Dichloroethene	100 ug/L	8260/70 (as applicable)
Methylene chloride	5 ug/L	8260/70 (as applicable)
Tetrachloroethene	0.7 ug/L	8260/70 (as applicable)
1,1,1-Trichloroethane	200 ug/L	8260/70 (as applicable)
1,1,2-Trichloroethane	0.6[2] ug/L	8260/70 (as applicable)
Trichloroethene	3 ug/L	8260/70 (as applicable)
INDICATOR PARAMETERS		
Ph	Field Measurement	
Specific Conductance	Field Measurement	
Temperature	Field Measurement	
Water level	Field Measurement	

Miscellaneous Notes:
** Listed method should be used or equivalent method*
*** Benzene only needs to be sampled under the terms listed in Condition IV.F.8 of the permit*

[1] = 1,1– DCE was adopted by the North Carolina EMC in accordance with 15A NCAC 2L .0202(f) and is above the federal MCL. For private drinking water wells or public water systems (only) that are impacted by 1,1-DCE the applicable standard is 7ug/L in accordance with 15A NCAC 2L .0202

[2] = NC2L Interim Maximum Allowable Concentration (established August 1, 2010)

In addition to the parameters itemized above, wells MW-1sr, MW-2sr, and MW-8sr shall be sampled and analyzed for Appendix IX parameters once every five years following issuance of the permit renewal.

Appendix IX Analysis: Use method specified in 40 CFR 264, Appendix IX, codified 15A NCAC 13A .0109.

Note: All methods without prefix are from SW 846 Test Methods For Evaluated Solid Waste; Latest edition, available from the Government Printing Office, Washington, D.C.

Note: All standard methods are from Standard Methods for the Examination of Waste and Wastewater; Latest edition, prepared and published jointly by the American Public Health Association, American Water Works Association, Water Pollution Control Federation.

Description of the Monitoring System

A total of 38 monitoring wells including eight (8) extraction wells have been installed or are designated as monitoring or extraction wells during various phases of investigations at the facility. Key changes to the previously approved 2007 groundwater monitoring system as requested by the facility, and, as accepted by the HWS, are included below. Following the list of changes, a summary table entitled (*Summary of Corrective Action Monitoring Program*) is provided that shows specifics related to the new, approved monitoring plan by location, type, by individual wells (and sampling locations), and by constituents (with frequency of monitoring).

Compliance Well Sampling Requirements

a) Waste MEK Tank Area – HWMU-1;
MW-2sr as the point of compliance well, and
MW-11s;

b) G-3, G-4, and G-5 Tank Area; HWMU-2;
MW-1sr as the point of compliance well,
MW-29s

c) Magnesium Burn Pit and Drum Storage Area – HWMU-3;
MW8sr as the point of compliance well;
MW-8i;
MW-19s

Plume Assessment/Corrective Action Effectiveness Monitoring

d) Plume Perimeter Monitoring Wells

MW-13s	MW-22d	MW-31i
MW-13i	MW-23i	MW-34d
MW-17i	MW-24s	DD
MW-18i	MW-24i	
MW-22s	MW-31s	

e) Private Residential Wells to be Monitored
Mr. Coleman Lee
Mr. George Harris

Effectiveness Well Sampling Requirements

f) Corrective Action Effectiveness/Interior Plume Wells

CW-1	MW-4i	MW-7s
EW-4	MW-6i	MW-16sr
MW-4s	MW-6s	Outfall 001

Groundwater Extraction Well Sampling Requirements

g) Extraction Wells

CW-2	EW-5	MW-16i
EW-1	MW-10i	
EW-3	MW-15i	

Point of Compliance Wells

Appendix IX Requirements
Wells MW-1sr, MW-2sr, and MW-8sr will be sampled during each annual monitoring event. In addition, these wells will be sampled for Appendix IX constituents every five years at least six months prior to the permit anniversary date.

A visual (plan view) representation of the changes identified in the groundwater monitoring program is found in the 2017 Permit Renewal Application as Figure E-10 which summarizes the changes to the groundwater monitoring well network. Monitoring wells in black represent no changes; wells in red indicate wells to be removed, and wells in green indicate wells to be added to the monitoring well network.

A cumulative summary table entitled "***Summary of Corrective Action Monitoring Program***" is provided below which describes details of the new, approved monitoring system.

Summary of Corrective Action Monitoring Program

Purpose of Monitoring Location	Location ID	Annual Sampling													Every 5 Years
		CHLORO-ETHANE	CHLOROFORM	1,1-DICHLOROETHANE	1,2-DICHLOROETHANE	1,1-DICHLOROETHENE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	METHYLENE CHLORIDE	TETRACHLOROETHENE	1,1,1-TRICHLOROETHANE	1,1,2-TRICHLOROETHANE	TRICHLOROETHENE	BENZENE	Appendix IX
NC 2L Standard (ug/L)		**3000**	**70**	**6**	**0.4**	**7 / 350 [1]**	**70**	**100**	**5**	**0.7**	**200**	**0.6 [2]**	**3**	**1**	**NA**
Waste MEK Tank Area HWMU 1	MW-2SR*	X	X	X	X	X	X	X	X	X	X	X	X		X
	MW-11S	X	X	X	X	X	X	X	X	X	X	X	X		
G-3, G-4, and G-5 Tank Area HWMU 2	MW-1SR*	X	X	X	X	X	X	X	X	X	X	X	X		X
	MW-29S	X	X	X	X	X	X	X	X	X	X	X	X	X	
Magnesium Burn Pit and Drum Storage Area HWMU 3	MW-8SR*	X	X	X	X	X	X	X	X	X	X	X	X		X
	MW-8I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-19S	X	X	X	X	X	X	X	X	X	X	X	X		
Plume Perimeter Monitoring Wells	MW-13S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-13I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-17I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-18I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-22S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-22D	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-23I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-24S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-24I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-31S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-31i	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-34D	X	X	X	X	X	X	X	X	X	X	X	X		
	Dockery Well	X	X	X	X	X	X	X	X	X	X	X	X		
Extraction Wells	CW-2	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-1	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-3	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-5	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-10I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-15I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-16IR	X	X	X	X	X	X	X	X	X	X	X	X		
Corrective Action Effectiveness/Interior Plume Wells	CW-1	X	X	X	X	X	X	X	X	X	X	X	X		
	EW-4	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-4S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-4I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-6S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-6I	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-7S	X	X	X	X	X	X	X	X	X	X	X	X		
	MW-16SR	X	X	X	X	X	X	X	X	X	X	X	X		
	Outfall 001	X	X	X	X	X	X	X	X	X	X	X	X		
Private Residential Wells	Coleman Lee	X	X	X	X	X	X	X	X	X	X	X	X		
	George Harris	X	X	X	X	X	X	X	X	X	X	X	X		
Total		**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**38**	**1**	**3**

Notes:

NC 2L Standard from the April 1, 2013 update

*MW-2sr is the POC well for HWMU 1; MW-1sr is the POC well for HWMU 2; and, MW-8sr is the POC well for HWMU 3

[1] 1,1-DCE was adopted by the EMC in accordance with 15A NCAC 2L 0202 (f) and is above the federal MCL. Where a private drinking water well or public water system is impacted by 1,1-DCE, the applicable standard is 7ug/L, in accordance with 15ANCAC 2L.0202

[2] - NC 2L Interim Maximum Allowable Concentration (established August 1, 2010)

APPENDIX B

PERMANENT MONITORING WELLS

1. The Permittee shall maintain the point of compliance monitoring wells MW-1sr, MW-2sr, and MW-8sr at the locations specified in Figure B-1. These point of compliance monitoring wells are screened in the shallow aquifer where the greatest concentration of contaminants at the site has been identified and detected, and, in the most hydraulically conductive zones.

APPENDIX C

CORRECTIVE ACTION PROGRAM DESIGN OF REMEDIAL ACTION SYSTEM

If revisions are needed, the Permittee shall submit corrective action construction design plans and data, blueprints and a construction schedule for the remedial action system including recovery wells, pumps, piping, tanks, air stripping unit and all associated equipment within ninety (90) days of notification. Construction shall be complete within 180 days of design approval by all applicable parties including the North Carolina Hazardous Waste Section and the North Carolina Division of Water Quality. The remedial action system design plans shall also include the following items:

Locations of the extraction and designated observation wells;

Specifications (pumping rates, diameter, screened intervals, etc.) of the extraction wells;

Projected horizontal and vertical influence of the ground-water extraction system, and all calculations used to make these projections.

INSPECTIONS

For a revised corrective action program, the Permittee shall submit a general inspection schedule as required by 264.15(b) with the remedial action system design plans within ninety (90) days of notification.

GENERAL INSPECTION REQUIREMENTS

A description of the inspection schedule for the following equipment must be provided.

1. Monitoring equipment
2. Emergency and safety equipment
3. Operating and structural equipment
4. Communication or alarm systems and decontamination equipment

The schedule must identify the types of problems to look for during inspections (e.g., leaks, deterioration, missing items or materials, inoperative equipment, etc.).

FREQUENCY OF INSPECTIONS

A description of the frequency of inspections must be provided for items on the schedule.

The extraction wells for the remedial action system shall be inspected weekly and the flows noted along with the flow at Outfall 001. These flows will be compared to the historical reading for that well to identify if potential pump problems have developed. The air stripping unit will be inspected to determine if they are running and that the air intakes are not blocked.

The air stripping unit will be inspected for leaks. Any problems will be noted and corrected, or, reported to maintenance if they can not be handled by the inspector.

Monthly items include walking the entire groundwater pumping and pipeline system from wells to air stripping unit for signs of leak, breaks, or other damage to the discharge lines from each

extraction well will also be used to monitor for leaks along the pipeline by comparing input flows to total output flow. The total output flow after passing through the stripper ranges from 8 to 10 percent less than total of the input flows because of evaporation loss. If the output flow indicates that the loss is 10 percent or greater, the operator will inspect the area of the underground piping for signs of leaks (of ground, damp ground, greener vegetation, springs or subsided areas). This inspection will be conducted at least monthly even if the output flow does not indicate leakage. Annually, the effectiveness samples will be collected and analyzed and the percent removal and total volatile organic concentrations reviewed. Adjustments to the air stripping unit will be made on the basis of this data. The Permittee shall also address inspection of emergency feedcut-off valves, system safe guard controls/alarms to make sure they are functioning properly.

REMEDIAL ACTION SYSTEM MAINTENANCE

The Permittee shall submit a maintenance schedule for the remedial action system including the soil vapor extraction (SVE) and groundwater treatment system within thirty (30) days of remedial action system design final approval. Procedures and frequency of maintenance shall be included.

Quarterly, the air stripping unit will be inspected and repairs made as needed. No preventive maintenance is available for the pumping system in each well. The pumps are submerged and generally run without interruption. However, lightning strikes and other electrical feedback problems can potentially cause failure of the pumps as well as erosion of the pump impellers. When either of these problems occur, the affected pump may need to be replaced.

REPORTING REQUIREMENTS

The following outlines the items required under Condition V.I. during the start-up phase of the remedial action system. Upon initiation of the corrective action program, and one (1) month thereafter, the Permittee shall provide groundwater level data from the designated observation wells as required for a standard pump test. This data, along with the pumping rates, shall be used to demonstrate the effectiveness of the ground-water extraction system during the start-up phase. Also include on/off frequencies for cyclic pumping and influences that may result from pumping. This data shall be included in the operating record and the annual report on the effectiveness of the corrective action system.

PERSONNEL TRAINING

The Permittee shall conduct introductory and continuing personnel training programs for each employee involved with ground-water sampling or the remedial action equipment. The training shall include instruction for emergency response, contingency plan implementation and explicit sampling, operation and maintenance procedures. The Permittee shall maintain training documents and records. An outline of the training programs shall be submitted to this office within thirty (30) days of final remedial action system design approval.

CONTINGENCY PLAN FOR REMEDIAL ACTION SYSTEM

The Permittee shall have a contingency plan for the remedial action system for response to spills, bursting or clogging of pipes, failure of equipment, or any other unplanned sudden or non-sudden release of hazardous waste constituents to air, soil or surface water at the facility. A contingency plan shall be submitted to this office within thirty (30) days of final remedial action system design approval.

ABANDONMENT

The Permittee shall submit an abandonment plan for the remedial action system within thirty (30) days of final remedial action system design approval. The Permittee shall at a minimum abandon the remedial action system in a manner that:

a. Minimizes the need for further maintenance, and;
b. Minimizes or eliminates, to the extent necessary to prevent threats to human health or the environment, post-closure escape of hazardous waste, and hazardous constituents.

APPENDIX D

SOLID WASTE MANAGEMENT UNITS AND AREAS OF CONCERN SUMMARY

List of Solid Waste Management Units and Areas of Concern requiring an RFI:

SWMU/AOC Number	Description

List of Solid Waste Management Units and Areas of Concern that require no further action at this time:

SWMU/AOC Number	Description
SWMU 3	Scrap Yard/Temporary Storage Area (over excavated SWMU 19)
SWMU 4	Drum Storage Area
SWMU 5	Underground Storage Tanks and Soil (G-10, G-11)
SWMU 6	Storage Tank Farm
SWMU 7	Underground storage Tanks and Soil G-13 - G-21 plus unnumbered 4000 gallon tank
SWMU 8	Waste Oil Storage Tanks G-22, G-23)
SWMU 9	Waste Water Treatment Plant Area
SWMU 9a	WWTP Filter Beds
SWMU 9b	Concrete Vault
SWMU 10	Hazardous Waste Storage Area
SWMU 12	Hazardous Waste Drum Storage Area
SWMU 14	Finishing Room
SWMU 14a	Dichromating Process
SWMU 14b	Phosphatizing Process
SWMU 14c	Inpregnating Process
SWMU 14d	Paint Stripping
SWMU 14e	Drain Trenches
SWMU/AOC Number	Description

SWMU 15	MEK Still Room
SWMU 16	Tumblers
SWMU 16a	Vibratory Finishing Sump
SWMU 17	Transfer Line
SWMU 18	Former Empty Drum Storage Area (near G-3, G-4, G-5)
SWMU 19	Old Drum Storage and Aluminum Chip Drainage Area: G-24 & Oil/Water Separator; AOC3 later put over this area
SWMU 20	Petroleum product and Waste Tanks Not Included in SWMU's 5, 7, and 8 (G-6, - G-9; G-12)
SWMU 21	Main Manufacturing Area SWMU's
SWMU 21a	Impregnating Process
SWMU 21b	Paint Stripping
SWMU 21c	Drain Trenches
SWMU 21d	Paint Stores
SWMU 21e	Waste Coolant Sump
SWMU 22	Existing Underground Wastewater Lines
SWMU 23*	Main Manufacturing Building Soil Contamination
AOC 7**	December 1996 spill of untreated groundwater
AOC 8***	January 1997 spill of untreated groundwater
AOC 11**	June 1997 spill of untreated groundwater
AOC16***	June 1999 spill of untreated groundwater

* The ongoing groundwater monitoring program addresses groundwater contamination in this area of the site.

** An RFI was performed at AOC7 and AOC 11 and based upon results of soil sampling, no further action was required.

*** An RFI/CMS was performed at AOC 8 and AOC 16. The selected corrective measure was excavation and off-site disposal of soil. Post-excavation sampling confirmed no additional action was required for soils and the NC Hazardous Waste Section approved closure of both AOC's per a January 5, 2005 letter.

List of Solid Waste Management Units and Areas of Concern requiring Confirmatory Sampling:

SWMU/AOC Number	Description

List of Solid Waste Management Units and Areas of Concern regulated by the RCRA Permit:

SWMU/AOC Number	Description
SWMU 1	Underground (Waste MEK) Storage Tank: HWMU 1
SWMU 2	Raw product Storage Tanks (G-3, G-4, G-5): HWMU 2
SWMU 11	Magnesium Burn Pit and Former Drum Storage Area: HWMU 3

List of Solid Waste Management Units and Areas of Concern with a Remedy Implemented:

SWMU/AOC Number	Description
SWMU 1	Underground (Waste MEK) Storage Tank: HWMU 1; Long-Term Monitoring; GW Extraction via Pump and Treat
SWMU 2	Raw product Storage Tanks (G-3, G-4, G-5): HWMU 2; Long-Term Monitoring; GW Extraction via Pump and Treat
SWMU 11	Magnesium Burn Pit and Former Drum Storage Area: HWMU 3; Long-Term Monitoring; GW Extraction via Pump and Treat
SWMU 13	Former Location of Burn Pit & Lagoons (under BDC bldg.) SVE System

Remedies Implemented include: 1) a SVE system for SWMU # 13; and, 2) a groundwater extraction system via pump and treatment for SWMU's 1, 2, and 11 (however, the reach of the extraction system is site-wide and reaches the closed site SWMU's as well).

APPENDIX E

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 V 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 the Department. 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" (third edition). 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 dispersement for analysis.

b. Sample storage;

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 document and 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 upgradient and downgradient 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.

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 F

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 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.

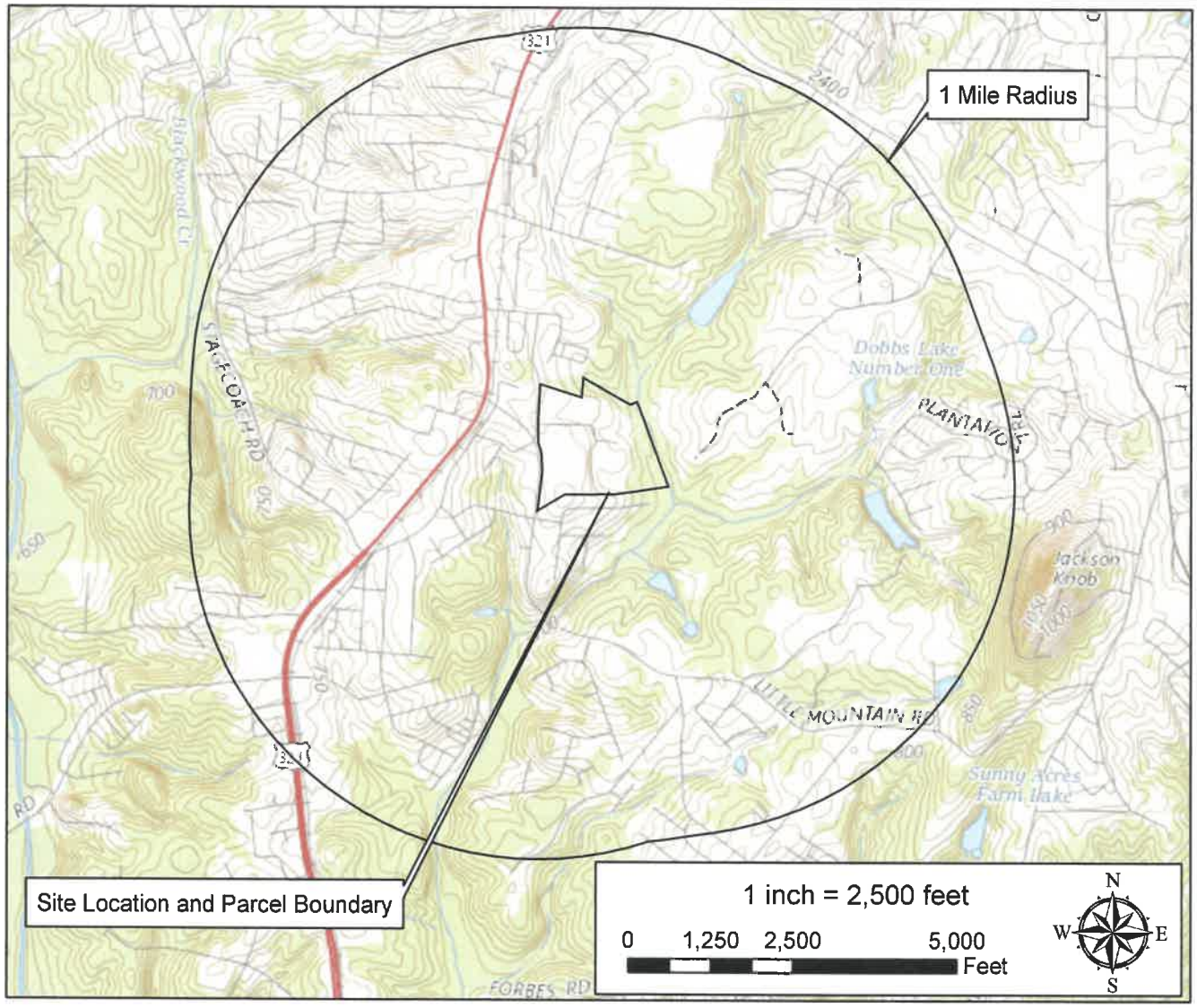
C. Public Review and Final Selection of Corrective Measures

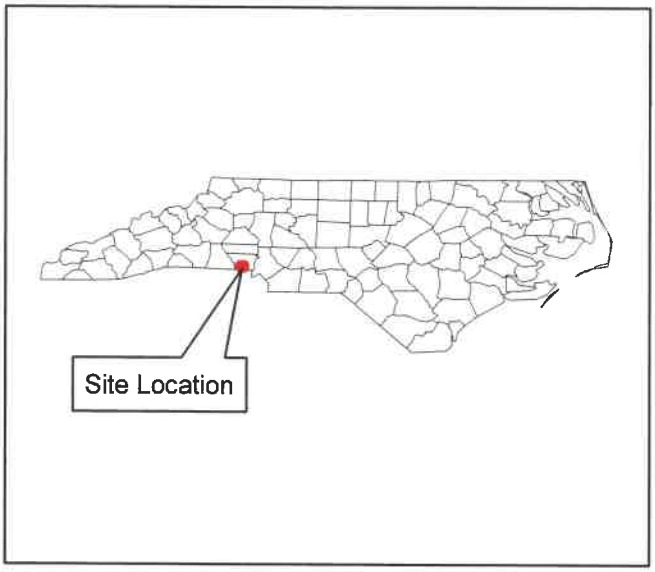
Upon receipt of the Final Corrective Measure Study Report, the Department shall announce its availability to the public for review and comment. At the end of the comment period, the Department shall review the comments and then inform the Permittee of the final decision as to the approved Corrective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

APPENDIX G

FIGURES

Project Manager Initials: ES Designer: KDL Checked: CM Approved: ES ANSI A 8.5" x 11"





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Former John Deere Consumer Products, Inc.
2017 RCRA Part B Permit Renewal Application
3800 Little Mountain Road
Gastonia, North Carolina
Project No.: 60526947 Date: 10-30-2017

SITE LOCATION MAP

USGS Topographic Quadrangle
Gastonia South, NC 2016

AECOM

Figure: A-3

LEGEND:

- MW – MONITORING WELL
- CW – COMMUNITY WELL
- EW – EXTRACTION WELL
- – MONITORING WELLS
- – INTERMEDIATE EXTRACTION WELLS
- – DEEP EXTRACTION WELLS
- P ● – PRIVATE WELLS
- – ABANDONED WELLS
- – OUTFALL

NOTES:

1. FORMER EXTRACTION WELLS CW-1, EW-2, MW-4i, MW-18i, MW-22d, MW-25i, MW-30i, HOMELITE PRODUCTION WELL, DAVID DOCKERY, AND FRENCH SHOWN AS MONITORING WELLS, PER 2011 GROUNDWATER TREATMENT SYSTEM MODIFICATIONS.

SOURCE:

BASE REFERENCE DRAWING PROVIDED BY AQUATERRA, FOR TEXTRON, INC.

AQUATERRA'S DRAWING No. 41090-1, DATED 2-28-95.

AECOM

Figure: A-4

SITE PLAN

Former John Deere Consumer Products, Inc.
2017 RCRA Part B Permit Renewal Application
3800 Little Mountain Road, Gastonia, North Carolina
Project No.: 60526947 Date: 10-27-2017

Project Management Initials: Designer: MDC Checked: CM Approved: ES ANSI D 22" x 34"

Last saved by: PIRESS (2017-10-31) Last Plotted: 2017-10-31
Filename: Z:\CAD\PROJECTS\TEXTRON\GASTONIA_NC\ANNUAL REPORTS TO TEXTRON\2017\DWG\FIGURE A-1_SWMU LOCATION MAP_1.17.DWG

AECOM

Figure: A-1

SWMU LOCATION MAP

Former John Deere Consumer Products, Inc.
2017 RCRA Part B Permit Renewal Application
3800 Little Mountain Road, Gastonia, North Carolina
Project No.: 60526947 Date: 10-27-2017

NAD 83
E 1,343,000

NAD 83
E 1,344,000

NAD 83
E 1,345,000

NAD 83
E 1,346,000

NAD 83
N 537,000

NAD 83
N 538,000

NAD 83
N 539,000

NAD 83
N 540,000

SWMU #15
FORMER MEK STILL ROOM
(INSIDE FORMER PAINT STORES ROOM)

HWMU #1/SWMU #1
FORMER WASTE MEK TANKS
D80, CLOSED UNIT

SWMU #21D
FORMER PAINT STORES ROOM

SWMU #14 FORMER FINISHING ROOM ALSO CONTAINS:
SWMU #21A FORMER IMPREGNATING PROCESS
SWMU #21B FORMER PAINT STRIPPING
SWMU #21C FORMER DRAIN TRENCHES

SWMU #23/AOC-23
MAIN MANUFACTURING
BUILDING SOIL
CONTAMINATION

SWMU #14
FORMER FINISHING ROOM

SWMU #18
FORMER EMPTY DRUM
STORAGE AREA

SWMU #16
FORMER
TUMBLERS

FORMER
JOHN DEERE CONSUMER
PRODUCTS PLANT

SWMU #21E
FORMER WASTE COOLANT SUMP

HWMU #2/SWMU #2
FORMER TANKS G-3,
G-4, & G-5
D80, CLOSED UNIT

SWMU #17
FORMER TRANSFER LINE

SWMU #6
FORMER STORAGE
TANK FARM

SWMU #20
FORMER
TANKS
G-6 - G-9
AND G-12

SWMU #3 FORMER SCRAP
YARD (OVER EXCAVATED
SWMU #19)

SWMU #7
FORMER USTs
AND SOIL

SWMU #4
FORMER DRUM
STORAGE AREA

AOC #8
JANUARY 1997 SPILL
OF UNTREATED
GROUNDWATER

SWMU #22
FORMER UNDERGROUND
WASTEWATER LINES

SWMU #5
FORMER USTs
AND SOIL

SWMU #8
FORMER WASTE
OIL USTs

BDC SVE
SYSTEM
ENCLOSURE

AOC #11
JUNE 1997 SPILL OF
UNTREATED GROUNDWATER

HWMU #3/SWMU #11
FORMER MAGNESIUM
BURN PIT/DRUM
STORAGE AREA
D80, CLOSED UNIT

AOC #7
DECEMBER 1996 SPILL
OF UNTREATED
GROUNDWATER

SWMU #13
FORMER LAGOONS
AND BURN PIT

SWMU #12
FORMER NONFLAMMABLE
HAZARDOUS WASTE STORAGE AREA

GROUNDWATER
TREATMENT
SYSTEM

OUTFALL 001

AOC #16
JUNE 1999 SPILL OF
UNTREATED
GROUNDWATER

SWMU #10
FORMER FLAMMABLE
HAZARDOUS WASTE
STORAGE AREA

APPROXIMATE LOCATION OF SEWER
SERVICE CONNECTION LINE

SWMU #9
FORMER WASTEWATER
TREATMENT PLANT

PROPERTY LINE

APPROXIMATE LOCATION
OF SEWER MAIN LINE

100 0 200
1"=200'

SOURCE:

BASE REFERENCE DRAWING PROVIDED BY AQUATERRA, FOR TEXTRON, INC.

AQUATERRA'S DRAWING No. 41090-1, DATED 2-28-95.

APPENDIX H

SCHEDULE OF COMPLIANCE

Schedule of Compliance	Due Date
Duty to Reapply for a Permit I.D.2	Submit a complete application 180 days prior to permit expiration date
Prepare and submit a biennial report I.G	Prepare and submit a biennial report on or before March 1 of each even numbered year unless directed otherwise.
Adjust Post-closure cost estimate for inflation II.H.1	Annually, depending on the Financial Assurance mechanism used, either 60 days prior to the anniversary date of the establishment of the mechanism or 30 days after the close of the Permittee's fiscal year.
Submit a Cost Estimate for Corrective Action II.J	Annually, depending on the Financial Assurance mechanism used, either 60 days prior to the anniversary date of the establishment of the mechanism or 30 days after the close of the Permittee's fiscal year.
Notify if possible, NC Hazardous Waste Section prior to sampling IV.H	Notify if possible, the NC Hazardous Waste Section Project Manager at least 2-weeks prior to sampling.
Submit monitoring report per IV.I	Submit report to the NC Hazardous Waste Section within 90-Days of Sampling.
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.3.	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 after discovery
Confirmatory Sampling Workplan for SWMUs identified in Appendix D, Condition V.E.1.	Within forty five (45) calendar days after notification by the Department.
Confirmatory Sampling Report Condition V.E.4.	In accordance with the approved CS Workplan
RFI Workplan for SWMU(s) Identified in Appendix D Condition V.F.1.a.	Within ninety (90) calendar days after notification by the Department.
RFI Workplan for SWMU(s) and AOC(s) under Condition V.C.4., Condition V.D.2., Condition V.E.5., and Condition V.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 V.F.3.a.	Quarterly, beginning ninety (90) calendar days from the start date specified by the Department *
Draft RFI Report Condition V.F.3.b.	In accordance with the approved RFI Workplan
Final RFI Report Condition V.F.3.b.	Within thirty (30) calendar days after receipt of the Department's comments on the Draft RFI Report
Interim Measures Workplan Condition V.G.1.a.	Within thirty (30) calendar days of notification by the Department

Schedule of Compliance	Due Date
Interim Measures Progress Reports Condition V.G.3.a.	In accordance with the approved IM Workplan **
Interim Measure Report Condition V.G.3.b.	Within ninety (90) calendar days of completion of interim measures
CMS Workplan Condition V.H.1.a.	Within ninety (90) calendar days of notification by the Department that a CMS is required
Implementation of CMS Workplan Condition V.H.2.	Within fifteen (15) calendar days after receipt of Department's approval of plan
Draft CMS Report Condition V.H.3a	In accordance with the approved CMS Workplan
Final CMS Report Condition V.H.3.a.	Within thirty (30) calendar days of the Department's comments on draft CMS Report
Demonstration of Financial Insurance Condition V.I.3.	Within one hundred and twenty (120) calendar days after permit modification for remedy
Imminent Hazard Report Condition V.K.1. and V.K.2.	Oral within 24 hours; written within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances
Waste Minimization	
Waste Minimization Certification Condition VI.	If Condition VI.A. is applicable, annually from the effective date of permit
Organic Air Emissions (AA, BB, CC)	
Organic Air Emissions Report Condition VIII.	Within thirty (30) calendar days after implementation of the unit's modification that renders Subpart AA and/or Subpart BB applicable

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

* This applies to Workplan execution that requires more than one hundred and eighty (180) calendar days.

** This applies to Workplan execution that requires more than one year.