ATTACHMENT III

Corrective Measures Study
Scope of Work

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Corrective Measures Study
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Purpose

The purpose of the Corrective Measures Study (CMS) portion of the RCRA corrective action process is to identify and evaluate potential remedial alternatives for the releases that have been identified at and/or from the Facility.

Scope

A Corrective Measures Study Report is, unless otherwise specified by U.S. EPA, a required element of the CMS. The CMS consists of the following components:

Section I: Corrective Measures Study Report

A. Introduction/Purpose
B. Description of Current Conditions
C. Media Cleanup Standards
D. Identification, Screening and Development of Corrective Measure Alternatives
E. Evaluation of A Final Corrective Measure Alternative
F. Recommendation by Respondent for a Final Corrective Measure Alternative
G. Public Involvement Plan

Section II: Progress Report

Section III: Proposed Schedule

Section I: Corrective Measures Study Report

The CMS Report shall include the following elements:

A. Introduction/Purpose

Respondent shall describe the purpose of the document and provide a summary description of the project.

B. Description of Current Conditions

Respondent shall include a brief summary/discussion of any new information that has been discovered since the RFI current conditions report was provided. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measures alternative(s).

C. Media Cleanup Standards

Respondent may propose media cleanup standards. The standards must be based on promulgated Federal and State standards, risk derived standards, all data and information gathered during the corrective action process (e.g., from interim measures, RCRA Facility Investigation, etc.), and/or other applicable guidance documents. If no other guidance exists for a given contaminant and media, Respondent shall propose and justify a media cleanup standard.

D. Identification, Screening, and Development of Corrective Measure Alternatives

1. Identification: List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the corrective action objectives. Respondent should consider including a table that summarizes the available technologies. Depending on the site-specific situation, U.S. EPA may require Respondent to consider additional technologies.

   Respondent should consider innovative treatment technologies, especially in situations where there are a limited number of applicable corrective measure technologies. Innovative technologies are defined as those technologies utilized for remediation other than incineration, solidification/stabilization, and pumping with conventional treatment for contaminated groundwater. Innovative treatment technologies may require extra effort to gather information, to analyze options, and to adapt the technology to the site-specific situation. Treatability studies and on-site pilot scale studies may be necessary for evaluating innovative treatment technologies.

2. Screening: When Respondent is required to, or chooses to, evaluate a number of corrective measures technologies, Respondent will evaluate the technology limitations to show why certain corrective measures technologies may prove unfeasible to implement given existing waste and site-specific conditions.

   Likewise, if only one corrective measure alternative is being analyzed, Respondent must indicate any technological limitations given waste and site-specific conditions at the facility for which it is being considered. Respondent should consider including a table that summarizes these findings.

Each alternative may consist of an individual technology or a combination of technologies used in sequence (i.e., treatment train). Depending on the site-specific situation, different alternatives may be considered for separate areas of the facility. List and briefly describe each corrective measure alternative.

E. Evaluation of a Final Corrective Measure Alternative

For each remedy which warrants a more detailed evaluation, including those situations when only one remedy is being proposed, Respondent shall provide detailed documentation of how the potential remedy will comply with each of the standards listed below. These standards reflect the major technical components of remedies including cleanup of releases, source control and management of wastes that are generated by remedial activities. The specific standards are provided below:

1. Protect human health and the environment.
2. Attain media cleanup standards set by the U.S. EPA.
3. Control the source of releases so as to reduce or eliminate, to the extent practicable, further releases that may pose a threat to human health and the environment.
4. Comply with any applicable standards for management of wastes.
5. Other Factors.

In evaluating the selected alternative or alternatives Respondent shall prepare and submit information that documents that the specific remedy will meet the standards listed above. The following guidance should be used in completing this evaluation. This guidance provides examples of the types of information that would be supportive; U.S. EPA may require additional information.

1. Protect Human Health and the Environment

Corrective action remedies must be protective of human health and the environment. Remedies may include those measures that are needed to be protective, but are not directly related to media cleanup, source control, or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to releases from an aquifer used for drinking water purposes. Another example would be a requirement for the construction of barriers or for other controls to prevent harm arising from direct contact with waste management units. Therefore, Respondent shall include a discussion on what types of short term remedies are appropriate for the particular facility in order to meet this standard. This information should be provided in addition to a discussion of how the other corrective measure alternatives meet this standard.

2. Attain Media Cleanup Standards Set by U.S. EPA

Remedies will be required to attain media cleanup standards set by U.S. EPA which may be derived from existing State or Federal regulations (e.g. groundwater standards) or other standards. The media cleanup standards for a remedy will often play a large role in determining the extent of and technical approaches to the remedy. In some cases, certain technical aspects of the remedy, such as the practical capabilities of remedial technologies, may influence to some degree the media cleanup standards that are established.

As part of the necessary information for satisfying this requirement, Respondent shall address whether the potential remedy will achieve the preliminary remediation objective as identified by U.S. EPA as well as other, alternative remediation objectives that may be proposed by Respondent. Respondent shall also include an estimate of the time frame necessary for each alternative to meet these standards.

3. Control the Sources of Releases

A critical objective of any remedy must be to stop further environmental degradation by controlling or eliminating further releases that may pose a threat to human health and the environment. Unless source control measures are taken, efforts to clean up releases may be ineffective or, at best, will essentially involve a perpetual cleanup. Therefore, an effective source control program is essential to ensure the long-term effectiveness and protectiveness of the corrective action program.

The source control standard is not intended to mandate a specific remedy or class of remedies. Instead, Respondent is encouraged to examine a wide range of options. This standard should not be interpreted to preclude the equal consideration of using other protective remedies to control the source, such as partial waste removal, capping, slurry walls, in-situ treatment/stabilization and consolidation.

As part of the CMS Report, Respondent shall address the issue of whether source control measures are necessary, and if so, the type of actions that would be appropriate. Any source control measure proposed should include a discussion on how well the method is anticipated to work given the particular situation at the facility and the known track record of the specific technology.

4. Comply With Any Applicable Standards for Management of Wastes.

Respondent shall include a discussion of how the specific waste management activities will be conducted in compliance with all applicable State or Federal regulations (e.g., closure requirements, land disposal restrictions).

5. Other Factors

There are five general factors that will be considered as appropriate by U.S. EPA in selecting/approving a remedy that meets the four standards listed above. These factors represent a combination of technical measures and management controls for addressing the environmental problems at the facility. The five general decision factors include:

a. Long-term reliability and effectiveness;
b. Reduction in the toxicity, mobility or volume of wastes;
c. Short-term effectiveness
d. Implementability; and
e. Cost.

U.S. EPA may request Respondent to provide additional information to support the use of these factors in the evaluation of viable remedial alternatives. Examples of the types of information that may be requested are provided below:

a. Long-term Reliability and Effectiveness

Demonstrated and expected reliability is a way of assessing the risk and effect of failure. Respondent may consider whether the technology or a combination of technologies have been used effectively under analogous site conditions, whether failure of any one technology in the alternative would have an immediate impact on receptors, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site (e.g., heavy rain storms, flooding, earthquakes, etc.).

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 alternative should be evaluated in terms of the projected useful life of the overall alternative and of its component technologies. Useful life is defined as the length of time the level of effectiveness can be maintained.

b. Reduction in the Toxicity, Mobility or Volume of Wastes

As a general goal, remedies will be preferred that employ techniques, such as treatment technologies, that are capable of eliminating or substantially reducing the inherent potential for the wastes in SWMUs (and/or contaminated media at the facility) to cause future environmental releases or other risks to human health and the environment. There may be some situations where achieving substantial reductions in toxicity, mobility or volume may not be practical or even desirable. Examples might include large, municipal-type landfills, or wastes such as unexploded munitions that would be extremely dangerous to handle, and for which the short-term risks of treatment outweigh potential long-term benefits.

Estimates of how much the corrective measures alternatives will reduce the waste toxicity, volume, and/or mobility may be helpful in applying this factor. This may be done through a comparison of initial site conditions to expected post-corrective measure conditions.

c. Short-term Effectiveness

Short-term effectiveness may be particularly relevant when remedial activities will be conducted in densely populated areas, or where waste characteristics are such that risks to workers or to the environment are high and special protective measures are needed. Possible factors to consider include fire, explosion, exposure to hazardous substances and potential threats associated with treatment, excavation, transportation, and re-disposal or containment of waste material.

d. Implement ability

Implement ability will often be a determining variable in shaping remedies. Some technologies will require State or local approvals prior to construction, which may increase the time necessary to implement the remedy. In some cases, State or local restrictions or concerns may necessitate eliminating or deferring certain technologies or remedial approaches from consideration in remedy selection. Information to consider when assessing implementability may include:

1. The administrative activities needed to implement the corrective measure alternative (e.g., permits, rights of way, off-site approvals, etc.) and the length of time these activities will take;
2. The constructability, time for implementation, and time for beneficial results;
3. The availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials; and
4. The availability of prospective technologies for each corrective measure alternative.

e. Cost

The relative cost of a remedy may be an appropriate consideration, especially in those situations where several different technical alternatives to remediation will offer equivalent protection of human health and the environment, but may vary widely in cost. However, in those situations where only one remedy is being proposed, the issue of cost would not need to be considered. Cost estimates could include costs for: engineering, site preparation, construction, materials, labor, sampling/analysis, waste management/disposal, permitting, health and safety measures, training, operation and maintenance, etc.

F. Recommendation by Respondent for a Final Corrective Measure Alternative

In the CMS Report, Respondent may recommend a preferred remedial alternative for consideration by U.S. EPA. Such a recommendation should include a description and supporting rationale for the proposed remedy, consistent with the remedial standards and the decision factors discussed above. Such a recommendation is not required and the U.S. EPA still retains the role of remedy selection.

G. Public Involvement Plan

After the CMS has been performed by Respondent and the U.S. EPA has selected a preferred alternative for proposal in the Statement of Basis, it is the agency's policy to request public comment on the Administrative Record and the proposed corrective measure(s). Changes to the proposed corrective measure(s) may be made after consideration of public comment. U.S. EPA may also require that Respondent perform additional corrective measures studies. If the public is interested, a public meeting may be held. After consideration of the public's comments on the proposed corrective measure, the agency develops the Final Decision and Response to Comments to document the selected corrective measure, the agency's justification for such selection, and the response to the public's comment. Additional public involvement activities may be necessary, based on site-specific circumstances.

Section II: Progress Reports

Respondent will, at a minimum, provide U.S. EPA with signed monthly progress reports. These reports are required to contain the following information, but U.S. EPA requirements are not limited to this list:

1. A description and estimate of the percentage of the CMS completed;
2. Summaries of *all* findings in the reporting period, including results of any pilot studies;
3. Summaries of *all* changes made in the CMS during the reporting period;
4. Summaries of *all* contacts with representative of the local community, public interest groups or State government during the reporting period;
5. Summaries of *all* contacts made regarding access to off-site property;
6. Summaries of *all* problems encountered during the reporting period;
7. Actions being taken to rectify problems;
8. Changes in relevant personnel during the reporting period;
9. Projected work for the next reporting period; and
10. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

Section III: Proposed Schedule

Respondent will provide the U.S. EPA with CMS submittals according to the following schedule:

Facility Submission	Due Date
Draft CMS Report (Section I)	Within 90 days of U.S. EPA approval of the RFI Report
Final CMS Report (Section I)	45 days after Public and U.S. EPA Comments on the Draft Final CMS
Progress Reports on Sections I	Monthly

ATTACHMENT IV

Corrective Measures Implementation
Scope of Work

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Corrective Measures Implementation
Scope of Work

PURPOSE

The purpose of the Corrective Measures Implementation (CMI) program is to design, construct, operate, maintain and monitor the performance of the Corrective Measures selected by U.S. EPA and other measures/additional work determined necessary by U.S. EPA pursuant to this Order such that the performance standards are achieved and maintained. Respondent shall furnish all personnel, materials and services necessary for the implementation of the Corrective Measures.

SCOPE
The CMI program shall consist of four tasks:

Section I: Corrective Measures Implementation Workplan
- A. Program Management Plan
- B. Public Involvement Plan
- C. Health and Safety Plan
- D. Quality Assurance Project Plan
- E. Sampling and Analysis Plan
- F. Surveys

Section II: Corrective Measures Design

- A. Preliminary Design
- B. Prefinal and Final Designs
- C. Operation and Maintenance Plan
- D. Cost Estimate
- E. Project Schedule
- F. Construction Quality Assurance Objectives

Section III: Corrective Measures Construction
- A. Responsibility and Authority
- B. Construction Quality Assurance Personnel Qualifications
- C. Inspection Activities
- D. Sampling Requirements
- E. Documentation

Section IV: Other Reports and Submissions
- A. Progress
- B. Construction Completion Report
- C. Attainment of Groundwater Performance Standards Report
- D. Completion of Work Report
- E. Institutional Controls
- F. Submittal Summary

Section I: Corrective Measures Implementation (CMI) Workplan

Respondent shall prepare and submit a CMI Workplan which includes the development and implementation of several plans, which shall be prepared concurrently. Respondent shall submit a draft CMI Workplan within 60 days of U.S. EPA's decision on the corrective measure(s) and submit a final CMI Workplan that incorporates U.S. EPA comments on the draft CMI Workplan according to the schedule identified in the Submittal Summary, Section IV. The CMI Workplan includes the following:

A. Program Management Plan

Respondent shall prepare and submit a Program Management Plan (PMP) which includes a discussion of the technical approach, engineering designs and plans, schedules, and personnel needed for performing the design, construction, operation, maintenance and monitoring of Corrective Measures for U.S. EPA review and approval. The PMP shall document the responsibility and authority of all organizations and key personnel involved with the implementation. The PMP shall also include a description of qualifications of key personnel directing the Corrective Measure Design and Implementation, including contractor personnel.

B. Public Involvement Plan

The existing Public Involvement Plan (PIP) shall be revised to describe the community relations program to be implemented by Respondent during the design and construction subject to the approval of U.S. EPA. Specific activities which must be conducted include the revision of the PIP to reflect knowledge of community concerns and involvement during design and construction and the preparation of a fact sheet at the completion of the engineering design. At the request of U.S. EPA, Respondent shall participate in the preparation of information disseminated to the public and in providing information for public meetings that may be held or sponsored by the U.S. EPA.

C. Health and Safety Plan

Respondent shall submit a Health and Safety Plan (HSP) to U.S. EPA for review although it does not require approval by U.S. EPA. The HSP shall be designed to protect on-site personnel and area residents from physical, chemical and other hazards posed by the Corrective Measures, including pre-design studies.

1. Major elements of the HSP shall include:

    - Facility description including availability of resources such as roads, water supply, electricity, and telephone service;
    - Description of the known hazards and evaluation of the risks associated with each activity conducted;
    - A list of key personnel and alternates responsible for site safety, response operations, and protection of human health;
    - Delineation of work area;
    - Description of protective clothing or other protective items to be worn by personnel in work area;
    - Procedures to control site access;

- Description of decontamination procedures for personnel and equipment;
- Site emergency procedures;
- Emergency medical care needed for injuries and toxicological problems;
- Description of requirements for an environmental surveillance program;
- Routine and special training required for response personnel; and
- Procedures for protecting workers from weather-related problems.

2. The Facility HSP shall be consistent with:

   - NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985);
   - EPA Order 1440.1 - Respiratory Protection;
   - EPA Order 1440.3 - Health and Safety Requirements for Employees engaged in Field Activities;
   - Facility Contingency Plan;
   - EPA Standard Operating Safety Guide (1984);
   - OSHA regulations particularly in 29 CFR 1910 and 1926;
   - State and local regulations; and
   - Other applicable EPA guidance as provided.

D. Quality Assurance Project Plan

Respondent shall prepare and submit a Quality Assurance Project Plan (QAPP) to document all monitoring procedures, sampling, field measurements, and sample analyses to be performed during the Corrective Measures, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid and properly documented. The QAPP shall be prepared in accordance with Attachment V. At the request of U.S. EPA, Respondent shall participate in a pre-QAPP meeting with the U.S. EPA prior to preparation of any QAPP.

A performance audit may be conducted by U.S. EPA on the laboratories selected by Respondent.

E. Sampling and Analysis Plan

Respondent shall develop a Sampling and Analysis Plan (SAP) for the predesign field activities and any monitoring programs required by this Order. Respondent shall submit the SAP addressing predesign field activities with the draft CMI Work Plan and shall propose a schedule for the submittal of any additional sampling plans. The SAP shall include, at a minimum:

1. A description of the proposed field activities;
2. The proposed locations of soil borings, ground water monitoring wells and surface water monitoring points;
3. A description of how the SAP is expected to meet the requirements of the final remedy;
4. A description of the planned operation and maintenance (O&M) activities, including the anticipated frequency of each O&M task;
5. A flow chart and schedule of work to be performed during the CMI.

F. Surveys

Respondent shall submit surveys to delineate current Facility boundaries and to update water well use adjacent to the Facility.

Section II: Corrective Measures Design

Respondent shall prepare final construction plans and specifications to implement the Corrective Measures at the facility which have been selected by U.S. EPA. The final product of the Corrective Measures Design shall be a technical package (or packages) that contain and address all elements necessary to accomplish the Corrective Measures. This includes all design support activities, initial permitting and access requirements, operation and maintenance, and institutional controls, as well as technical elements.

A. Preliminary Design

Respondent shall submit for U.S. EPA review and approval a Preliminary Design when the design effort is approximately 50% complete. The Preliminary Design submittal shall include or discuss, at a minimum, the following:

1. Design strategy and basis, including compliance with all applicable or relevant environmental and public health standards and minimization of environmental and public impacts;
2. Technical factors of importance, including use of currently accepted environmental control measures and technology, design constructability, and use of currently acceptable construction practices techniques;
3. A summary of activities performed and data generated during Corrective Measures Design or Predesign, including results and interpretations of data and studies;
4. Design assumptions and parameters, including design restrictions and process performance criteria;
5. Real estate, easement and permit requirements;
6. Preliminary construction schedule, including contracting strategy;
7. Discussion of the possible sources of error and references to possible operation and maintenance problems;
8. Detailed drawings of the proposed designs, including qualitative and quantitative flow sheets;
9. Tables listing equipment and specifications;
10. Tables giving material and energy balances; and
11. Sample calculations and derivation of equations essential to understanding the report.

B. Prefinal and Final Designs

Respondent shall submit for U.S. EPA review and approval the Prefinal Design when the design effort is 95% complete and shall submit the Final Design when the design effort is 100% complete. The Prefinal Design shall fully address all U.S. EPA's comments on the Preliminary Design. After receipt of U.S. EPA comments on the Prefinal Design, Respondent shall execute the required revisions and submit the Final Design with reproducible drawings and specifications suitable for bid advertisement. The Final Design consists of the Final Design Plans and Specifications (100% complete), Final Construction Cost Estimate, Final Operation and

Maintenance Plan, Construction Quality Assurance Objectives, Final Project Schedule and Final Health and Safety Plan specifications.

The U.S. EPA may require additional work, including but not limited to studies, to supplement the available technical data. Respondent shall furnish all equipment and personnel necessary to complete any additional work needed. Draft and final reports shall be prepared and present all data obtained during the additional studies, a summary of the results, and conclusions.

C. Operation and Maintenance Plan

Respondent shall prepare an Operation and Maintenance (O&M) Plan to cover both implementation and long term maintenance of the Corrective Measures. A draft O&M Plan shall be submitted for U.S. EPA review and comment concurrently with the Prefinal Design and the final O&M Plan shall be submitted for U.S. EPA review and approval with the Final Design.

The plan shall include the following elements:

1. Description of normal O&M:
    a. Description of tasks for operation;
    b. Description of tasks for maintenance;
    c. Description of prescribed treatment or operation conditions; and
    d. Schedule showing frequency of each O&M task.

2. Description of potential operating problems:
    a. Description and analysis of potential operation problems;
    b. Sources of information regarding problems; and
    c. Common and/or anticipated remedies.

3. Description of routine monitoring and laboratory testing:
    a. Description of monitoring tasks;
    b. Description of required laboratory tasks and their interpretation;
    c. Required data collection, Quality Assurance Project Plan (QAPP);
    d. Schedule of monitoring frequency; and
    e. Description of triggering mechanisms for ground water/surface water monitoring results.

4. Description of alternate O&M:
    a. Should system fail, alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and the environment or exceed cleanup standards; and
    b. Analysis of vulnerability and additional resource requirements should a failure occur.

5. Corrective steps:
    a. Description of corrective steps to be implemented in the event that cleanup or performance standards are not met; and
    b. Schedule for implementing these corrective steps.

6. Safety plan:
    a. Description of precautions, of necessary equipment, etc., for site personnel; and
    b. Safety tasks required in event of systems failure.

7. Description of equipment:
    a. Equipment identification;
    b. Installation of monitoring components;
    c. Maintenance of site equipment; and
    d. Replacement schedule for equipment and installed components.

8. Records and reporting mechanisms required:
    a. Daily operating logs;
    b. Laboratory records;
    c. Records for operating costs;
    d. Mechanism for reporting emergencies;
    e. Personnel and maintenance records; and
    f. Monthly/annual reports to State agencies.

D. Cost Estimate

Respondent shall refine the cost estimate developed in the CMS to reflect the more detailed/accurate design plans and specifications being developed. The cost estimate shall include both capital and O&M costs. An Initial Cost Estimate shall be submitted simultaneously with the Prefinal Design and the Final Cost Estimate with the Final Design.

E. Project Schedule

Respondent shall develop a project schedule for construction and implementation of the Corrective Measures which identifies timing for initiation and completion of all critical path tasks. The schedule to be submitted to U.S. EPA for review and approval shall provide for the completion of the Corrective Measures in a reasonable period of time. Respondent shall specifically identify dates for completion of the project and major interim milestones. An initial project schedule shall be submitted simultaneously with the Prefinal Design and a final project schedule with the Final Design.

F. Construction Quality Assurance Objectives

Respondent shall identify and document the objectives and framework for the development of a construction quality assurance program including, but not limited to the following: responsibility and authority; personnel qualifications; inspection activities; sampling requirements and documentation. Draft Construction Quality Assurance Objectives, Prefinal Design, and the Final Construction Quality Assurance Plan shall be submitted for U.S. EPA review and approval within 45 days after U.S. EPA's approval of the Final Design.

Section III: CORRECTIVE MEASURES CONSTRUCTION

Respondent shall finalize the Construction Quality Assurance Plan incorporating comments received on the draft Construction Quality Assurance Plan submitted with the Prefinal Design.

Within 45 days of U.S. EPA's approval of the Final Design, Respondent shall implement a construction quality assurance (CQA) program and submit the Final CQA Plan to ensure, with a reasónable degree of certainty, that a completed Corrective Measure will meet or exceed all design criteria, plans and specifications. The CQA Plan is a facility specific document which must be approved by U.S. EPA prior to the start of the construction. At a minimum, the CQA Plan should include the elements which are summarized below. Within 120 days of U.S. EPA's approval of the CQA Plan, Respondent shall construct and implement the Corrective Measures in accordance with the approved design, schedule and CQA Plan. Respondent shall also implement the elements of the approved O&M Plan.

A. Responsibility and Authority

Respondent shall describe fully in the CQA Plan the responsibility and authority of all organizations (i.e., technical consultants, construction firms, etc.) and key personnel involved in the construction of the corrective measures. Respondent shall also identify a CQA officer and the necessary supporting inspection staff.

B. Construction Quality Assurance Personnel Qualifications

Respondent shall set forth the qualifications of the CQA Officer and supporting inspection personnel shall be presented in the CQA plan to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

C. Inspection Activities

Respondent shall summarize in the CQA plan the observations and tests that will be used to monitor the construction and/or installation of the components of the Corrective Measures. The plan shall include the scope and frequency of each type of inspection. Inspections shall verify compliance with environmental requirements and include, but not be limited to air quality and emissions monitoring records, waste disposal records (e.g., RCRA transportation manifests), etc. The inspection shall also ensure compliance with all health and safety procedures. In addition to the oversight inspections, Respondent shall conduct construction inspections.

Within 30 days after Respondent makes a preliminary determination that construction is complete, Respondent shall notify U.S. EPA for the purposes of conducting an inspection. The inspection shall consist of a walk-through inspection of the entire project site. The inspection is to determine whether the project is complete and consistent with the contract documents and the U.S. EPA-approved Corrective Measures. Any outstanding construction items discovered during the inspection shall be identified and noted. Additionally, treatment equipment, if installed, shall be operationally tested by Respondent. Respondent shall certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. Respondent shall outline in the inspection report the outstanding construction items, actions required to resolve items, completion date for these items and date for final inspection.

Upon completion of any outstanding construction items, Respondent shall notify U.S. EPA for the purposes of conducting a final inspection. The final inspection shall consist of a walk-through inspection of the project site. Confirmation shall be made that outstanding items have been resolved subject to EPA's approval.

D. Sampling Requirements

Respondent shall present in the CQA Plan the sampling activities, sample size, sample locations, frequency of testing, criteria for acceptance and rejection and plans for correcting problems as addressed in the project specifications.

E. Documentation

Respondent shall describe in detail in the CQA plan the reporting requirements for CQA activities. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports and final documentation. Provisions for the final storage of all records shall be presented in the CQA Plan.

Section IV: Other Reports and Submissions

Respondent shall prepare plans, specifications and reports as set forth in Sections I through III to document the design, construction, operation, maintenance and monitoring of the Corrective Measure. Other documentation shall include, but not be limited to the following:

A. Progress

Respondent shall at a minimum provide the U.S. EPA with signed monthly progress reports during the design and construction phases and semi-annual progress reports for operation and maintenance activities containing:

1. A description and estimate of the percentage of the CMI completed;
2. Summaries of all findings;
3. Summaries of all changes made in the CMI during the reporting period;
4. Summaries of all contacts with representatives of the local community, public interest groups or State government during the reporting period;
5. Summaries of all problems or potential problems encountered during the reporting period;
6. Actions being taken to rectify problems;
7. Changes in personnel during the reporting period;
8. Projected work for the next reporting period; and
9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Construction Completion Report

Within 30 days of a successful final inspection, as determined by U.S. EPA, Respondent shall submit a Construction Completion Report. In the report, a registered professional engineer and Respondent's Project Coordinator shall state that the Corrective Measures have been constructed in accordance with the design and specifications, to the best of their knowledge, and the performance standards have been attained. The written report shall include as-built drawings signed and stamped by a registered professional engineer. The report shall be certified by a Responsible Official pursuant to Section XIV of the Order. The Final O&M Plan shall be submitted concurrently with the Construction Completion Report.

C. Attainment of Ground Water Performance Standards Report

Within 30 days after Respondent concludes that the ground water performance standards have been attained, Respondent shall submit a written report and certification to U.S. EPA for review and approval. In the report, a registered professional engineer and Respondent's Project Coordinator shall state that the ground water performance standards have been attained in full satisfaction of the requirements of this Order. The report shall be certified by a Responsible Official pursuant to Section XIV of the Order.

D. Completion of Work Report

This report shall be submitted by Respondent when construction is complete, performance standards have been attained and O&M is complete. Within 30 days after Respondent concludes that all phases of the work (including O&M and monitoring) have been completed, Respondent shall schedule and conduct a precertification inspection to be attended by representatives of Respondent and U.S. EPA. After the precertification inspection and any prefinal or subsequent final inspections required by U.S. EPA, Respondent shall submit within 30 days of a successful final inspection, a written Completion of Work Report to U.S. EPA for approval. In the report, a registered professional engineer and Respondent's Project Coordinator shall state that the Corrective Measures have been completed in full satisfaction of the requirements of this Order. The written report shall include as-built drawings stamped by a registered professional engineer. The report shall be certified by a Responsible Official pursuant to Section XIV of the Order.

E. Institutional Controls

1. Respondent shall execute and record an Environmental Covenant in accordance with Ohio Revised Code ("ORC") Sections 5301.80 to 5301.92 imposing the following activity and use limitations upon the refinery and land farm portions of the Facility:
    - No use of groundwater
    - No subgrade development
    - No residential use
    - No daycare or preschools

2. A model format of the environmental covenant shall be provided to Respondent following execution of this Order. Respondent shall submit a draft environmental covenant to U.S. EPA for review within 30 days of receipt of the model format from U.S. EPA. The schedule for executing and recording the Environmental Covenant and for providing to U.S. EPA a file and date-stamped copy of the recorded Environmental Covenant shall be included in the RIP.

    a. Respondent shall assure that the activity and use limitations set forth in the Environmental Covenant are continually maintained so long as Respondent owns the Facility.
    b. If Respondent conveys any interest in any portion of the Facility identified in the Environmental Covenant, including but not limited to easements, deeds, leases and mortgages, Respondent must include, in the instrument

of conveyance, that portion of the Environmental Covenant that describes the activity and use restrictions imposed on the portion of the Facility to be conveyed.

c. No later than sixty (60) days prior to executing any instrument conveying any interest in any portion of the Facility, including but not limited to deeds, leases and mortgages, Respondent shall provide written notice of the conveyance to U.S. EPA at the following address:

Project Manager, BASF Catalysts (EPA ID OHD 000 804 682)
U. S. EPA Region 5
77 W. Jackson Blvd. LU-9J
Chicago, IL 60604

, and to OEPA at the following address:

Ohio Environmental Protection Agency
Lazarus Government Center
Division of Hazardous Waste Management
P.O. Box 1049
Columbus, Ohio 43216-1049

F. Submittal Summary

A summary of the information reporting requirements contained in the CMI Scope of Work is presented below.

SUBMITTAL	DUE DATE
Draft CMI Workplan -Project Management Plan -Public Involvement Plan -Health and Safety Plan -Pre-Design QAPP -Pre-Design SAP -Surveys	Within 60 days of U.S. EPA's decision on corrective measure(s)
Final CMI Workplan -Revisions to Draft	30 days after receipt of U.S. EPA's comments on Draft CMI Workplan

SUBMITTAL	DUE DATE
Preliminary Design (50%) -Design Criteria -Pre-Design Results -Design Assumptions/ Parameters -Preliminary Plans -Outline of Required Specifications -Preliminary Construction Schedule Prefinal Design (95%) -Revisions to Preliminary Design -Final QAPP -Final SAP -Final HSP -Final Construction Schedule -Cost Estimates -Draft O&M Plan -CQA Objectives Final Design (100%) -Revisions to Prefinal Design	In accordance with the project schedule approved in the CMI Workplan 30 days after receipt of U.S. EPA's comments on Preliminary Design 30 days after receipt of U.S. EPA's comments on Prefinal Design
Construction Quality Assurance Plan (CQAP)	45 days after U.S. EPA's approval of Final Design
Construct and implement corrective measure(s)	120 days after U.S. EPA's approval of CQAP
Final O&M Plan Construction Inspection Construction Completion Report	30 days after final Construction Inspection 30 days after Construction Completion 30 days after final Construction Inspection
O&M Progress Report	No later than one year after U.S. EPA's approval of Construction Completion Report, semi-annually thereafter
Attainment of GW Performance Standards Report	30 days after determination that GW performance standards have been attained
Completion of Work Inspection Completion of Work Report	30 days after completion of all work, including O&M 30 days after Completion of Work Inspection