ATTACHMENT A

CORRECTIVE MEASURES IMPLEMENTATION
SCOPE OF WORK

PURPOSE

This Scope of Work ("SOW") sets forth the requirements for the implementation of the design, construction, operation, maintenance, and monitoring of the corrective measure or measures pursuant to the Final Administrative Order on Consent ("Consent Order" or "Order") to which this SOW applies. The work performed under this Order will implement the corrective measures that have been selected by EPA in the Final Decision and Response to Comments ("FDRTC") and any amendments thereto. The Respondent(s) will furnish all personnel, materials, and services necessary for the implementation of the corrective measure or measures.

SCOPE

The Corrective Measures Implementation consists of four tasks:

Task I: Corrective Measures Implementation Work Plan
- A. Management Plan
- B. Community Relations Plan
- C. Sampling and Analysis Plan
- D. Corrective Measures Permitting Plan
- E. Supplemental Field Investigation Work Plan

Task II: Corrective Measure Design
- A. Design Plans and Specifications
- B. Operation and Maintenance Plan
- C. Cost Estimate
- D. Construction Quality Assurance Plan
- E. Health and Safety Plan
- F. Sampling and Analysis Plan/Performance Monitoring Plan
- G. Design Phases

Task III: Corrective Measure Construction
- A. Project Review Meetings
- B. Inspections
- C. CMI Report

Task IV: Reports

A. Progress Reports and Corrective Measures Assessment Reports
B. CMI Work Plan
C. CMI Design Report (Preliminary and Final)
D. CMI Report

Further specifications of the work outlined in this SOW will be provided in the Corrective Measures Implementation Work Plan and subsequent plans to be reviewed and approved by EPA. Variations from the SOW will be made, if necessary, to fulfill the objectives of the Corrective Measures set forth in the FDRTC and any amendments thereto.

Additional studies may be needed as part of the Corrective Measures Implementation to supplement the available data. At the direction of EPA for any such studies required, the Respondent(s) shall furnish all services, including field work, materials, supplies, plant, labor, equipment, investigations, and superintendence. Sufficient sampling, testing and analysis shall be performed to optimize the operation of the required treatment, disposal, containment and/or monitoring system.

TASK I: CORRECTIVE MEASURE IMPLEMENTATION WORK PLAN

The Respondent shall prepare a Corrective Measure Implementation ("CMI") Work Plan. The CMI Work Plan shall outline the design, construction, operation, maintenance and monitoring of all actions taken to implement the Corrective Measures as defined in the Order and the FDRTC and any amendments thereto. This CMI Work Plan will include the development and implementation of several plans, which require concurrent preparation. It may be necessary to revise plans as necessary during the performance of this Order. The CMI Work Plan shall include the following:

A. Management Plan- The Respondent shall prepare a Management Plan which will address the following items, as necessary and appropriate:

1. Documentation of the overall management strategy for performing the design, construction, operation, maintenance, and monitoring of corrective measure(s);

2. Description of the responsibility and authority of all organizations and key personnel involved with the implementation;

3. Description of the qualifications of key personnel directing the CMI, including contractor personnel;

4. Conceptual design of the treatment and/or disposal system or any corrective measures to be installed as set forth in the FDRTC;

5. An outline of proposed field activities necessary to complete the CMI Design including

proposed locations of groundwater monitoring wells and a detailed well development plan;

6. Proposed discharge options for treated groundwater, with a preferred option upon which the CMI Design will be based;

7. Proposed detailed performance criteria for groundwater treatment;

8. A description of how the conceptual design is expected to meet the technical requirements of the FDRTC and any amendments thereto; and

9. Schedule of work including sequence of activities to be performed during the CMI and proposed timing for submittals required during the CMI.

B. Community Relations Plan - The Respondent shall submit and/or revise the Community Relations Plan to include any material changes in the level of concern or information needs of the community during design and construction activities. The following activities shall be completed, as necessary and appropriate based on site-specific considerations:

1. The facility Community Relations Plan shall be revised to reflect knowledge of citizen concerns and involvement at this stage of the process, and;

2. Prepare and distribute a public notice and an updated fact sheet at the completion of engineering design, and;

3. Conduct group meetings or information sessions to convey updates on the technical status.

C. Sampling and Analysis Plan - Respondent shall submit and/or revise the Sampling and Analysis Plan describing work to be performed during Corrective Measures Design which shall be comprised of:

1. A Quality Assurance Project Plan (QAPjP) including data quality objectives for design phase activities;

2. A Field Sampling Plan describing the sample collection techniques and protocols to be used for any design phase data collection;

4. A Data Management Plan describing the steps to be followed in compiling, organizing, reviewing and reporting data collected in accordance with the Sampling and Analysis Plan, and;

5. A Supplemental Field Investigation Work Plan describing the rationale, protocols and methodologies for any additional hydrogeologic investigations or other field work that may be necessary for the proper design of the remedial systems set forth in the FDRTC. The work plan shall include an expeditious schedule for the completion and reporting of any such supplemental field work.

D. Corrective Measures Permitting Plan - Respondent shall submit a Corrective Measures Permitting Plan identifying all federal, state, interstate, regional and local permits and approvals required for the implementation of the Corrective Measures required by the Consent Order, and for the implementation of any institutional controls required by the Consent Order. The plan shall also identify all agreements or other arrangements with adjoining landowners, if any, known by Respondent to be necessary for the implementation of the Corrective Measures, including, but not limited to, site access and easement agreements. The plan shall include a schedule indicating the time needed to obtain all such approvals and permits and to enter into such agreements and arrangements. This schedule may be integrated with the design/implementation schedule items.

TASK II: CORRECTIVE MEASURE DESIGN

The Respondent shall prepare preliminary and final construction plans and specifications to implement the corrective measures at the facility as set forth in the FDRTC and any amendments thereto.

A. Design Plans and Specifications - The Respondent shall develop clear and comprehensive design plans and specifications (in both preliminary and final forms) which include, but are not limited to, the following:

1. Discussion of the design strategy and the design basis, including: (a) compliance with all applicable or relevant environmental and public health standards; (b) minimization of environmental and public health impacts, and; (c) updated schedules, if necessary, from commencement through completion of construction of the CMI.

2. Discussion of the technical factors of importance including: (a) use of currently accepted environmental control measures and technology; (b) the constructibility of the design, and; (c) use of currently accepted construction practices and techniques.

3. Description of assumptions made and detailed justification of these assumptions.

4. Detailed drawings of the proposed design including qualitative flow sheets and quantitative flow sheets.

5. Tables listing equipment and specifications;

6. Appendices including: (a) sample calculations (one example presented and explained clearly for significant or unique design calculations); (b) results of laboratory or field tests; (c) list of specifications to be provided in full in the Final Design submittal, and; (d) list (and outline/table of contents) of documents and plans to be prepared and submitted with Final Design.

B. Operation and Maintenance Plan - The Respondent shall prepare or revise the Operation and Maintenance ("O&M") Plan to cover both the implementation and long term maintenance of the corrective measure(s). The O&M Plan shall identify and describe the processes to occur, submissions required during O&M, and schedule for O&M activities consistent with remedial objectives set forth in the FDRTC and any amendments thereto. The O & M Plan shall include, but not be limited to the following elements:

1. Description of routine O&M including tasks required to operate and maintain treatment system or other components of corrective measures and a schedule showing frequency and duration of each O & M task.

2. Description of potential operating problems including the procedures to be used to analyze and diagnose potential operation problems, sources of information regarding problems, and common or anticipated trouble-shooting steps and remedies.

3. Description of routine monitoring and laboratory testing including a description of specific monitoring tasks required for the corrective measures, a description of required laboratory tests and their interpretation/reporting, a description of required QA/QC activities and, a schedule of monitoring frequency and date, if appropriate, when monitoring may cease.

4. Description of alternate O&M to be used should systems fail including alternate procedures to be used to prevent undue hazard and, an analysis of vulnerability and additional resource requirements should a failure occur.

5. Safety plan including description of precautions for specific equipment, etc., for site personnel and, safety tasks required in the event of systems failure.

6. Description of equipment including the identification, layout and installation of monitoring components, maintenance of site equipment and, replacement schedule for equipment and installed components.

7. Records and reporting mechanisms including daily operating logs, laboratory records and test results, operating and maintenance cost records, mechanism for reporting emergencies, personnel and maintenance records, and progress reports to State and Federal agencies.

An initial O&M Plan shall be submitted simultaneously with the Preliminary (30%) Design

submission, and the Final O&M Plan shall be submitted with the Final Design documents.

C. Cost Estimate - The Respondent shall develop cost estimates of the Corrective Measures set forth in the FDRTC for the purpose of assuring that the Respondent has the financial resources necessary to construct, implement and maintain the corrective measures. The cost estimate developed in the Corrective Measure Study shall be refined and updated to reflect, in current dollars, the more detailed/accurate design plans and specifications being developed. The cost estimate shall include both capital and operation and maintenance costs, as well as any necessary long term monitoring costs.

D. Construction Quality Assurance Plan - The Respondent shall identify and document the framework and components of a construction quality assurance program including, but not limited to the following: responsibility and authority; personnel qualifications; inspection and testing activities; sampling and testing requirements; and documentation and reporting.

E. Health and Safety Plan - The Respondent shall prepare a Health and Safety Plan or modify the Health and Safety Plan developed for the RCRA Facility Investigation and/or Interim Measures activities to address all work to be performed at the facility to implement the corrective measures set forth in the FDRTC.

F. Sampling and Analysis Plan/Performance Monitoring Plan - Respondent shall update the Sampling and Analysis Plan, including the QAPjP, during each phase of Design, as necessary and appropriate, to reflect changes in the following: responsibility and authority; personnel qualifications; inspection activities; sampling requirements; and, documentation and reporting. Additional revisions shall be made, or a separate document prepared (Performance Monitoring Plan) to describe the performance monitoring program that will be used to measure the effectiveness of the corrective measures set forth in the FDRTC. The performance monitoring plan shall describe all sampling, monitoring, data analysis and reporting activities that will be completed to demonstrate the effectiveness of the corrective measures.

G. Design Phases - The design of the corrective measures set forth in the FDRTC should include the phases outlined below:

1. Preliminary (30%) CMI Design

a. The Respondent shall submit the 30% CMI Design Report when the design effort is approximately 30% complete. At this stage the Respondent shall have field verified the existing conditions of the facility. The 30% design shall reflect a level of effort such that the specifications may be reviewed to determine if the final design will provide effective, operable and usable corrective measures. Supporting data and documentation shall be provided with the design documents defining the functional aspects of the program. The 30% construction drawings shall reflect organization and clarity.

b. Correlating plans and specifications - The plans and specifications to be included in the 30% CMI Design Report shall demonstrate that the Respondent has coordinated and cross-checked the specifications and drawings and, completed the proofing of the edited specifications and required cross-checking of all drawings and specifications.

c. Equipment start-up and operator training - The Respondent shall prepare and include in the technical specifications governing treatment and/or disposal systems, contractor requirements for providing appropriate service visits by experienced personnel to supervise the installation, adjustment, startup and operation of the treatment systems, and training covering appropriate operational procedures once the startup has been successfully accomplished.

2. Final (90%) CMI Design

The Final CMI Design Report shall consist of the Final Design Plans and Specifications (90 - 100% complete), the Respondent's Final Cost Estimate, the Final Operation and Maintenance Plan, Final Construction Quality Assurance Plan, Final Project Schedule, and Final Health and Safety Plan. The quality of the design documents should be such that the Respondent could include them in a bid package and invite contractors to submit bids for the construction project.

TASK III: CORRECTIVE MEASURE CONSTRUCTION

Following EPA approval of the Final CMI Design Report, the Respondent shall implement construction in accordance with procedures, specifications, and schedules in the EPA-approved Final CMI Design Report and the EPA approved CMI Work Plan. During the Construction Phase, Respondent will continue to submit periodic progress reports. The Respondent shall also implement the elements of the approved Construction Quality Assurance Plan, Sampling and Analysis Plan, and O&M plan, as necessary and appropriate.

The Respondent shall conduct the following activities during construction:

A. Preconstruction Inspection and Meeting - The Respondent shall conduct a preconstruction inspection and meeting to:

1. Review methods for documenting and reporting inspection data;
2. Review methods for distributing and storing documents and reports;
3. Review work area security and safety protocol;
4. Discuss any appropriate modifications of the construction quality assurance plan to ensure that site-specific considerations are addressed; and
5. Conduct a site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspection and meeting shall be documented by a designated person and minutes should be transmitted to all parties.

B. Inspections

1. Respondent will conduct inspections to monitor the construction and/or installation of components of the corrective measure. Inspections shall verify compliance with all environmental requirements and include, but not limited to, review of air quality and emissions monitoring records, waste disposal records (e.g. RCRA transportation manifests), etc, as applicable. Inspections will also ensure compliance with all health and safety procedures. Treatment and/or disposal equipment will be operationally tested by the Respondent. The Respondent will certify that the equipment has performed to meet the purposes and intent of the specifications. Retesting will be completed where deficiencies are revealed.

2. When all construction is complete, the Respondent shall notify EPA for the purposes of conducting a final inspection. The final inspection will consist of a walk through inspection of the project site. The inspection is to determine whether the project is complete and consistent with contract documents and the EPA approved corrective measures. Any outstanding construction items will be identified and noted. If necessary, Respondent shall notify EPA upon completion of any outstanding construction items and another final inspection consisting of a walk-through inspection of the project site to confirm all outstanding items have been resolved.

C. CMI Report - Upon completion of construction and an initial period of performance monitoring, and in accordance with the schedule included in the EPA-approved CMI Workplan and the EPA-approved Final CMI Design Report, Respondent will prepare and submit a CMI Report. The CMI Report shall describe activities performed during construction, provide actual specifications of the implemented remedy, and provide a preliminary assessment of CMI performance.

TASK IV: REPORTS

The Respondent shall prepare plans, drawings, specifications, and reports as set forth in Tasks I through III to document the design, construction, operation, maintenance, and monitoring of the corrective measure. The documentation shall include, but not be limited to the following:

A. Progress Reports and Corrective Measures Assessment Reports

Quarterly - The Respondent shall provide the EPA with signed, quarterly progress reports containing:

1. A description of the work performed during the preceding monitoring interval 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 system performance during the reporting period including a summary of all problems or potential problems encountered or anticipated during the reporting period;
6. Actions 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.

Annual - The Respondent shall provide EPA with signed annual progress reports and/or Corrective Measures Assessment Reports (including 5 Year Assessment Report) containing:

1. A narrative summary of principal activities conducted during the reporting period;
2. Graphical or tabular presentations of monitoring data, including but not limited to average monthly system pumping rates and throughput, efficiency, groundwater levels and flow direction, and groundwater quality;
3. A schedule of sampling and field activities to be performed and reported in the following year, and
4. An O&M Evaluation or Corrective Measures Assessment Report assessing the performance of the corrective measure over time. The O & M Evaluation/Assessment Report shall include:

a. Summarized data representing corrective measure performance during respective two-year intervals;
b. Any proposed changes to the corrective measure and summary of previous changes;
c. Iso-concentration maps for each contaminant of concern listed in the FDRTC;
d. Statistical assessment of the progress of the corrective measure towards achievement of media clean-up standards; and,
e. When appropriate, notification that corrective action media clean-up standards have been achieved.

An Annual Progress Report shall not be required for any year in which the Respondent is required to submit a Corrective Measures Five Year Assessment Report.

B. CMI Work Plan - The Respondent shall submit a CMI Work Plan as outlined in Task I. The QAPP, included with the CMI Work Plan, will be revised, as appropriate, throughout the CMI.

C. The Preliminary (30%) CMI Design Report - The Respondent shall submit a Preliminary (30%) CMI Design Report as outlined in Task II to this SOW.

The 30% CMI Design Report shall include:

1. Draft Design Plans and Specifications reflecting 30% of design work completed to date;
2. Draft O&M Plan, Construction Quality Assurance Plan, and Health and Safety Plan;
3. A preliminary cost estimate; and
4. A revised project schedule.

D. The Final (90%) CMI Design Report - The Respondent shall submit a Final (90%) CMI Design Report as outlined in Task II of this SOW.

The 90% CMI Design Report shall include:

1. A summary of activities performed and data generated during Corrective Measure Design, including results and interpretation of treatability and/or pilot studies;
2. Draft detailed Corrective Measure Design Plans and Specifications reflecting 90% of design work completed to date;
3. Final performance criteria for the corrective measures, consistent with comments to have been provided by EPA on the conceptual design;
4. Proposal of means to evaluate system performance against media cleanup standards listed in the FDRTC and any amendments thereto;
5. A Final O&M Plan, Construction Quality Assurance Plan, and Health and Safety Plan;
6. A revised cost estimate;
7. Revision to the Sampling and Analysis Plan, including the QAPP, to address sampling and performance monitoring activities to be completed during the Corrective Measures Construction Phase, including the sampling activities, sample size, sample locations, frequency of testing, acceptance and rejection criteria, and plans for correcting problems; and,
8. Proposed changes to the Project Schedule, if appropriate, with emphasis on the short-term construction schedule.

E. CMI Report

The Respondent shall submit the CMI Reports as outlined in Task III to this SOW. The CMI Report shall describe all activities performed during construction, provide actual specifications and as-built drawings of the constructed or implemented remedy, and provide a preliminary assessment of CMI performance. The CMI Report shall include, but not be limited to, the following elements:

1. Synopsis of the corrective measure and certification of the design and construction;
2. Explanation of any modifications to the EPA-approved construction and/or design plans and why these were necessary for the project;
3. Listing of the criteria, established in the EPA-approved CMI Work Plan, for judging whether the corrective measure is functioning properly, and also explaining any modification to

these criteria;

4. Certification by registered professional engineer that the construction is complete, consistent with contract documents and the EPA-approved Final CMI Design, and that the equipment performs to meet the intent of the specifications;

5. Results of Facility monitoring, assessing the likelihood (and approximate time frame) that the corrective measure will meet the media clean-up standards set forth in the FDRTC and any amendment thereto.

This report should include a summary of the daily inspection reports, inspection data sheets, problem identification and corrective measure reports, block evaluation reports, photographic reporting data sheets, design engineers' acceptance reports, deviations from design and material specifications (with justifying documentation), and as-built drawings, unless otherwise agreed to by EPA.