



**FAX TRANSMISSION SHEET**

**U.S. EPA, REGION 6  
COMPLIANCE ASSURANCE AND ENFORCEMENT DIVISION  
HAZARDOUS WASTE ENFORCEMENT BRANCH  
TECHNICAL SECTION**

**TRANSMISSION DATE: September 9, 1998**

<u>TO:</u>	<u>Phone #:</u>	<u>FAX #:</u>
Michael Donnellan		202-514-8395
Gary O'Dea		505-768-4525
Mark Schmidt		505-768-3629
Anna Marie Ortiz		505-827-1628
Dennis McQuillan		505-827-2965
Baird Swanson		505-884-9254
Charles de Saillan		505-827-4440
Carl Will		202-293-0169
Steve Amter		202-293-0169
<b>FROM: Michael A. Hebert (6EN-HX) EPA</b>	<b>Phone #: 214-665-8315</b>	<b>FAX #: 214-665-7446</b>

Total Number of Pages: 20 If all pages were not received, please contact the sender.

**COMMENTS:**

**Revised restoration outline.**

I had a conversation with Arnold and Steve Amter this morning. Since the order basically incorporates a phased approach to ground water extraction, we determined that even though our settlement approach does not exactly mirror what is in the order, that it is still consistent with the Order. Basic reason for this is that it is recognized that additional data and evaluation will probably be needed prior to making any final determination re: restoration. I have incorporated what Michael Donnellan sent out yesterday with the standard version of the CAP that we have used for the other outlines. Please take a look at this beast and get back to either Arnold or myself within a couple of hours (i.e., by 4:00 p.m. Eastern time).

Thanks, Mike Hebert

*Notice: The document(s) accompanying this cover sheet contain confidential and privileged information. The information is intended only for the use of the intended recipient named above. Any other person is prohibited from disclosing, copying, distributing, or taking any action in reliance on the information except its direct delivery to the intended recipient named above. If you have received this fax in error, please notify the sender immediately by telephone to arrange for the return of the original documents to the sender.*

**ATTORNEY-CLIENT PRIVILEGED**  
**Prepared for Counsel**  
**Confidential Settlement Document-Not for Public Release**  
**Inadmissible Under Federal Rules of Evidence**  
**Prepared in Anticipation of Litigation**

**GROUND WATER EXTRACTION CORRECTIVE MEASURE-RESTORATION (Task V of the Final Administrative Order)**

*Plaintiffs understand that Sparton will evaluate whether additional cleanup measures (i.e., ground water extraction or other cleanup strategies) should be implemented for the purpose of (1) attaining the remedial objective within a reasonable time frame, or (2) reducing the long term cost of the cleanup. The restoration evaluation will apply to on and off-site contaminated ground water and that a principal component of the evaluation will be the development of a flow and transport model of the aquifer which can be used to estimate the impact on cleanup time of alternate cleanup strategies.*

*Plaintiffs understand that Sparton will submit a workplan describing the restoration evaluation process. The workplan should specify the data to be collected to support the flow and transport model, and the Sparton will begin collecting that data upon approval of the workplan. The workplan should also specify that Sparton will develop an initial flow and transport model of the aquifer within one year after the effective date of the workplan. The flow and transport model should be updated at least annually to reflect additional data collected.*

*The workplan should also provide for an annual assessment of Sparton's progress in the evaluation. In this annual report, which is subject to EPA approval, Sparton should evaluate the past and projected future effectiveness of the current corrective measures (i.e., off-site containment and on-site source containment) in attaining the remedial objective of restoration of all contaminated ground water. The evaluation should follow EPA guidance in evaluating the performance of the current corrective measures. (See, (1) U.S. EPA, Methods for Evaluating the Attainment of Cleanup Standards, Volume 2: Ground Water; EPA/230/R-92/014, (2) U.S. EPA, Methods for Monitoring Pump-and-Treat Performance; EPA/600/R-94/123) The report should also evaluate whether sufficient data are being collected to develop and verify the flow and transport model of the aquifer. If data collection is needed to develop and/or verify the flow and transport model, the report should propose measures to collect those data. Finally, the report should evaluate whether additional cleanup measures should be implemented prior to the next annual report. If Sparton concludes that additional cleanup measures should not be implemented prior to the next annual report, the report will state the reasons for that conclusion. If Sparton concludes that additional cleanup measures should be implemented prior to the next annual report, the report should propose the schedule for the development of the Design, Construction, and Operations and Maintenance workplans associated with implementation of those measures.*

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

*Plaintiffs understand that Sparton may at any time, after implementation of corrective measures, request that EPA select an alternative and/or supplemental corrective measure(s). Sparton may also at any time, after implementation of corrective measures, submit a Technical Impracticability Demonstration to EPA proposing that attainment of one or more of the federal cleanup standards is technically impractical; (2) a Technical Infeasibility Demonstration to NMED proposing that attainment of one or more of the New Mexico Water Quality Standards is technically infeasible; or (3) a petition with the New Mexico Water Quality Control Commission (WQCC) seeking approval of alternative abatement standards in lieu of the New Mexico Water Quality Standards. In any proposed Technical Impracticability Demonstration submitted to EPA, Sparton should also submit an alternative remedial strategy that is: (1) technically practicable; (2) consistent with the overall objectives of the remedy (as specified in the Final Administrative Order); (3) controls the source(s) of the contamination; and (4) controls human and environmental exposure. Any proposed Technical Infeasibility Demonstration submitted to NMED, and any submitted to the WQCC, should be in accordance with the WQCC regulations. An alternative remedial strategy shall be imposed if a determination of technical impracticability is made by EPA or a determination of technical infeasibility is made by NMED.*

**A. Ground Water Investigation Workplan**

*This section will apply, if during the assessment of ground water restoration additional data are identified which must be collected in order to complete the assessment. Upon identification of additional data needs, then a ground water investigation workplan shall be developed and submitted for EPA approval.*

**1. Project Management Plan**

The Project Management Plan includes a discussion of the technical approach, schedules, budget, and an outline of proposed activities necessary to complete the design of the ground water extraction system.

**2. Data Collection Quality Assurance Plan**

The Data Collection Quality Assurance Plan documents all monitoring procedures: sampling, field measurements, and sample analysis performed during the investigation so as to ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented. This plan includes the following:

**ATTORNEY-CLIENT PRIVILEGED**  
**Prepared for Counsel**  
**Confidential Settlement Document-Not for Public Release**  
**Inadmissible Under Federal Rules of Evidence**  
**Prepared in Anticipation of Litigation**

a. **Data Collection Strategy**

The Data Collection Strategy includes the following:

- (1) Description of the intended uses for the data, and the necessary level of precision and accuracy for these intended uses;
- (2) Description of methods and procedures to be used to assess the precision, accuracy, and completeness of the measurement data; and
- (3) Description of the methodology used to assure that the data accurately and precisely represents the characteristics of a population, parameter variations at a sampling point, and process conditions or environmental conditions. Examples of factors which shall be considered and discussed include:
  - (a) Environmental conditions at the time of sampling;
  - (b) Number of sampling points;
  - (c) Representativeness of selected media; and
  - (d) Representativeness of selected analytical parameters.

b. **Sampling**

The sampling section discusses the following:

- (1) Selecting appropriate sampling locations, depths, etc.;
- (2) Determining a statistically sufficient number of sampling sites;
- (3) Determining which media are to be sampled (e.g., ground water, etc.);
- (4) Determining which parameters are to be measured and where;
- (5) Selecting the frequency of sampling and length of sampling period;
- (6) Selecting the types of samples and number of samples;
- (7) Documenting field sampling operations and procedures, including:
  - (a) Documentation of procedures for preparation of reagents or supplies which become an integral part of the sample (e.g., filters, and adsorbing reagents);

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

- (b) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
  - (c) Documentation of specific sample preservation method;
  - (d) Calibration of field devices;
  - (e) Collection of replicate samples;
  - (f) Submission of field blanks, where appropriate;
  - (g) Construction materials and techniques associated with monitoring wells and piezometers;
  - (h) Field equipment listing and sample containers;
  - (i) Sampling order; and
  - (j) Decontamination procedures.
- (8) Selecting appropriate sample containers;
  - (9) Sample preservation; and
  - (10) Chain-of-custody, including:
    - (a) Standardized field tracking reporting forms to establish sample custody in the field prior to shipment; and
    - (b) Pre-prepared sample labels containing all information necessary for effective sample tracking.

**c. Field Measurements**

The Field Measurements section discusses the following:

- (1) Selecting appropriate field measurement locations, depths, etc.;
- (2) Providing a statistically sufficient number of field measurements;
- (3) Measuring all necessary ancillary data;
- (4) Determining conditions under which field measurement should be conducted;
- (5) Determining which media are to be addressed by appropriate field measurements (e.g., ground water, etc.);
- (6) Determining which parameters are to be measured and where;
- (7) Selecting the frequency of field measurement and length of field measurements period; and
- (8) Documenting field measurement operations and procedures, including:

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

- (a) Procedures and forms for recording raw data, and the exact location, time, and facility-specific considerations associated with the data acquisition;
- (b) Calibration of field devices;
- (c) Collection of replicate measurements;
- (d) Submission of field blanks, where appropriate;
- (e) Construction materials and techniques associated with monitoring wells and piezometers used to collect field data;
- (f) Field equipment listing;
- (g) Order in which field measurements were made; and
- (h) Decontamination procedures.

**d. Contaminated Material Disposal**

All contaminated material generated by ground water restoration activities shall be disposed of in accordance with all Federal and State laws and regulations.

**e. Sample Analysis**

The Sample Analysis section specifies the following:

- (1) Chain-of-custody procedures, including:
  - (a) Identification of a responsible party to act as sample custodian at the laboratory facility authorized to sign for incoming field samples, obtain documents of shipment, and verify the data entered onto the sample custody records;
  - (b) Provision for a laboratory sample custody log consisting of serially numbered standard lab-tracking report sheets; and
  - (c) Specification of laboratory sample custody procedures for sample handling, storage, and disbursement for analysis.
- (2) Sample storage procedures and holding times;
- (3) Sample preparation methods;
- (4) Analytical procedures, including:
  - (a) Scope and application of the procedure;

**ATTORNEY-CLIENT PRIVILEGED**  
**Prepared for Counsel**  
**Confidential Settlement Document-Not for Public Release**  
**Inadmissible Under Federal Rules of Evidence**  
**Prepared in Anticipation of Litigation**

- (b) Sample matrix;
- (c) Potential interferences;
- (d) Precision and accuracy of the methodology;
- (e) Method detection limits;
- (f) Calibration procedures and frequency;
- (g) Data reduction, validation, and reporting;
- (h) Internal quality control checks, laboratory performance, and systems audits and frequency, including:
  - 1) Method blank(s);
  - 2) Laboratory control sample(s);
  - 3) Calibration check sample(s);
  - 4) Replicate sample(s);
  - 5) Matrix-spiked sample(s);
  - 6) Blind quality control sample(s);
  - 7) Control charts;
  - 8) Surrogate samples;
  - 9) Zero and span gases; and
  - 10) Reagent quality control checks.
- (i) Preventive maintenance procedures and schedules;
- (j) Corrective action (for laboratory problems); and
- (k) Turnaround time.

**3. Data Management Plan**

The Data Management Plan documents and tracks investigation data and results. This plan identifies and set ups data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan also provides the format to be used to present the raw data and conclusions of the investigation. The plan includes the following:

**a. Data Record**

The data record includes the following:

- (1) Unique sample or field measurement code;
- (2) Sampling or field measurement location and sample or

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

measurement type;

- (3) Sampling or field measurement raw data;
- (4) Laboratory analysis ID number;
- (5) Property or component measured; and
- (6) Result of analysis (e.g., concentration).

**b. Tabular Displays**

The following data is presented in tabular displays:

- (1) Unsorted (raw) data;
- (2) Results for each medium, or for each constituent monitored;
- (3) Data reduction for statistical analysis;
- (4) Sorting of data by potential stratification factors [e.g., location, ground water flow zone (upper, upper lower, etc.)]; and
- (5) Summary data.

**c. Graphical Displays**

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

- (1) Display sampling locations and sampling grids;
- (2) Contaminant concentrations at each sampling location;
- (3) Display average and maxima contaminant concentrations;
- (4) Geographical extent of contamination and illustrate changes in concentration in relation to distance from the source and depth;
- (5) Indicate features affecting intramedia transport; and
- (6) Illustrate the stratigraphy in the area of the ground water contamination.

**B. Ground Water Extraction and Treatment Project****1. Ground Water Investigation Report**

***If an additional investigation is implemented, then a ground investigation report will be prepared documenting the additional investigation activities.***

**ATTORNEY-CLIENT PRIVILEGED**  
**Prepared for Counsel**  
**Confidential Settlement Document-Not for Public Release**  
**Inadmissible Under Federal Rules of Evidence**  
**Prepared in Anticipation of Litigation**

The Ground Water Investigation Report. This Report includes the following:

- a. A description, including maps, of the horizontal and vertical extent, including concentration profiles, of the contaminants in the ground water originating from the Facility;
- b. Based on field data and aquifer tests, a representative and accurate description of the hydrogeologic units which are a part of the migration pathways for the contaminant plume, including:
  - (1) Hydraulic conductivity;
  - (2) Lithology, grain size, sorting;
  - (3) Velocity of ground water;
  - (4) Zones of higher permeability or lower permeability that might direct and restrict the flow of contaminants;
  - (5) Cross sections showing the extent (depth, thickness, lateral extent) of hydrogeologic units which may be part of the migration pathways;
  - (6) Water-level contour and/or potentiometric maps; and
  - (7) Hydrologic cross sections showing vertical gradients.
- c. Definition of the containment area (two-dimensional) and volume (three-dimensional);
- d. Appropriate data and analyses for the design and implementation of a ground water extraction system, treatment system, and disposal system. This shall include the appropriate field pilot test(s), aquifer test(s), etc., to provide data to determine design parameters and projected effectiveness of the full-scale ground water extraction system, treatment system, and disposal system. The ground water extraction system shall be capable of hydraulically containing the contaminant plume, and reducing contaminant concentrations to comply with the cleanup goals by maximizing contaminant mass removal and minimizing cleanup time.
- e. The necessary contaminant reductions (e.g., volatile organic compounds, chromium, etc.), in the extracted ground water to comply with Federal, State, and local standards prior to disposal; and

**ATTORNEY-CLIENT PRIVILEGED**  
**Prepared for Counsel**  
**Confidential Settlement Document-Not for Public Release**  
**Inadmissible Under Federal Rules of Evidence**  
**Prepared in Anticipation of Litigation**

- f. The recommended disposal method for the treated ground water which is consistent with the criteria in the FDRTC document for conservation of the ground water resource.

2. Design Plans and Specifications

***The Design Plans and Specifications will be developed under the implementation of the Ground Water Restoration Workplan.***

The design package consists of the detailed drawings and specifications needed to construct the corrective measure(s). The Design Plans and Specifications include the following documents:

- a. General Site Plans;
- b. Process Flow Diagrams;
- c. Mechanical Drawings;
- d. Electrical Drawings;
- e. Piping and Instrumentation Diagrams;
- f. Structural Drawings;
- g. Excavation and Earthwork Drawings;
- h. Site Preparation and Field Work Standards;
- i. Construction Drawings;
- j. Installation Drawings;
- k. Equipment Lists; and
- l. Specifications for Equipment and Material.

3. Construction Workplan

***The Construction Workplan will be developed under the implementation of the Ground Water Restoration Workplan.***

The purpose of the Construction Workplan is to document the overall management strategy, construction quality assurance procedures, and schedule for constructing the corrective measure. The Construction Workplan includes the following elements:

- a. Project Management: Describe the construction management approach including levels of authority and responsibility (include organization

**ATTORNEY-CLIENT PRIVILEGED**  
**Prepared for Counsel**  
**Confidential Settlement Document-Not for Public Release**  
**Inadmissible Under Federal Rules of Evidence**  
**Prepared in Anticipation of Litigation**

chart).

- b. **Project Schedule:** The project schedule shall specify all significant steps in the process, including the timing for key elements of the bidding process, the timing for initiation and completion of all construction tasks as specified in the Design Plans and Specifications.
- c. **Waste Management Practices:** Describe the wastes generated by the construction of the corrective measure, and how they will be managed.
- d. **Required Permits:** List and describe the permits needed to construct and operate the corrective measure. Indicate on the project schedule when the permit applications will be submitted to the applicable agencies and an estimate of the permit issuance date.
- e. **Quality Assurance Project Plan:** The purpose of construction quality assurance is to ensure, with a reasonable degree of certainty, that a completed corrective measure will meet or exceed all design criteria, plans, and specifications. Sampling and monitoring activities may also be needed for construction quality assurance/quality control and/or other construction related purposes. To ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented, there is a Quality Assurance Project Plan (QAPjP) to document all monitoring procedures, sampling, field measurements, and sample analysis performed during these activities. The quality assurance, quality control, and chain-of-custody procedures used should be approved by the EPA. These procedures are described in EPA's Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, QAMS-005/80, December 29, 1980, or as superseded by EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R-5).
- f. **Construction Contingency Procedures:**
  - (1) Changes to the design and/or specifications may be needed during construction to address unforeseen problems encountered in the field. Procedures to address such circumstances, including notification of EPA, shall be included in the Construction

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation****Workplan.**

- (2) The Construction Workplan specifies that in the event of a construction emergency (e.g. fire, earthwork failure, etc.), Respondent shall orally notify the EPA within twenty-four (24) hours of the event, and shall notify the EPA in writing within seven (7) days of the event. The written notification shall, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on human health and/or the environment; and
- (3) Procedures to be implemented if unforeseen events prevent corrective measure construction.

**g. Cost Estimate**

There will be a cost estimate developed that includes both corrective measure construction and operation and maintenance costs. The purpose of the cost estimate is to assure that Sparton has the financial resources necessary to construct and implement the corrective measure(s).

**h. Documentation Requirements**

There will be a description of how the analytical data and results will be evaluated, documented, and managed, consistent with SW-846, 3rd Edition, or as superseded.

**i. Appendices, including:**

- (1) Design Data - Tabulations of significant data used in the design effort;
- (2) Equations - List and describe the source of major equations used in the design process;
- (3) Sample Calculations - Present and explain at least one example calculation for significant or unique design calculations; and

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

(4) Laboratory or Field Test Results.

4. Operation and Maintenance Plan

***The Operation and Maintenance Plan will be developed under the implementation of the Ground Water Restoration Workplan.***

The O&M Plan outlines the procedures for performing operations, long term maintenance, and monitoring of the corrective measure. The O&M plan includes the following elements:

- a. **Project Management:** Describe the management approach, including levels of authority and responsibility (include organization chart), during the operation and management phase of the remedy implementation.
- b. **System Description:** Describe the ground water extraction, treatment, and disposal systems, and identify and describe significant equipment (e.g., pumps, controllers, piping, wiring, treatment system parts, alarms, etc.).
- c. **Start-Up Procedures:** Describe system start-up procedures including any operational testing.
- d. **Operation and Maintenance Procedures:** Describe normal operation and maintenance procedures, including:
  - (1) Description of tasks for operation;
  - (2) Description of tasks for maintenance;
  - (3) Description of prescribed treatment or operation conditions; and
  - (4) Schedule showing frequency of each O&M task.
- e. **Replacement schedule for equipment and installed components.**
- f. **Waste Management Practices:** Describe the wastes generated by operation of the corrective measure and how they will be managed.

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

- g. **Quality Assurance Project Plan: Sampling and monitoring activities may be needed for effective operation and maintenance of the corrective measure. To ensure that all information, data, and resulting decisions are technically sound, statistically valid, and properly documented, there is a Quality Assurance Project Plan (QAPjP) to document all monitoring procedures, sampling, field measurements, and sample analyses performed during these activities. Quality assurance, quality control, and chain-of-custody procedures approved by the EPA will be used. These procedures are described in EPA's Interim Guidelines and Specifications for Preparing Quality Assurance Project Plans, QAMS-005/80, December 29, 1980, or as superseded by EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations (EPA QA/R-5).**
- h. **Corrective Measure Monitoring: Describe the following:**
- (1) **monitoring objectives;**
  - (2) **the types of measurements to be made (e.g., pumping rates, hydraulic heads, contaminant concentrations, ground water chemistry, precipitation, etc.);**
  - (3) **measurement locations;**
  - (4) **measurement methods, equipment, and procedures;**
  - (5) **measurement schedules; and**
  - (6) **record-keeping and reporting requirements.**
- This data and information shall be used to prepare Progress Reports and the Corrective Measure Assessment and Completion Reports.**
- i. **O&M Contingency Procedures:**
- (1) **Procedures to address system breakdowns and operational problems, including a list of redundant and emergency back-up equipment and procedures;**
  - (2) **Alternate procedures to be implemented if the corrective measure suffers complete failure. The alternate procedures must be able to prevent release or threatened releases of hazardous wastes and/or hazardous waste constituents which may endanger human health and/or the environment or exceed media cleanup standards;**

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

- (3) The O&M Plan specifies that in the event of a major breakdown and/or complete failure of the corrective measure (includes emergency situations), Sparton shall orally notify the EPA within twenty-four (24) hours of the event, and shall notify the EPA in writing within seven (7) days of the event. Written notification shall, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on human health and/or the environment; and
  - (4) Procedures to be implemented in the event that the corrective measure is experiencing major operational problems, is not performing to design specifications, and/or will not achieve the remediation goals, objectives, or cleanup levels, in the expected time frame.
- j. **Data Management and Documentation Requirements:** The O&M Plan specifies that the following information will be collected and maintained:
- (1) Progress Report Information;
  - (2) Monitoring and laboratory data;
  - (3) Records of operating costs; and
  - (4) Maintenance and inspection records.

This data and information shall be used to prepare Progress Reports and the Corrective Measure Assessment and Completion Reports.

5. **Health and Safety Plan**

An updated Health and Safety Plan for the Ground Water Extraction Corrective Measure will be developed as a stand alone document, and submitted to EPA.

6. **Commencement of Construction**

Upon receipt of written notification from the EPA, Sparton shall commence the construction process and implement the Construction Workplan in accordance

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

with the schedule and provisions contained therein.

**C. Construction Completion Report**

***The Construction Completion Report will be developed upon implementation of the Ground Water Restoration Workplan.***

The Construction Completion Report documents how the completed project or component is consistent with the Final Design Plans and Specifications. The Construction Completion Report included the following elements:

1. Synopsis of the corrective measure, design criteria, and certification that the corrective measure was constructed in accordance with the Final Design Plans and Specifications;
2. Explanation and description of any modifications to the Final Design Plans and Specifications and why these were necessary for the project;
3. Results of any operational testing and/or monitoring, indicating how initial operation of the corrective measure compares to the design criteria;
4. Summary of significant activities that occurred during construction. Include a discussion of problems encountered and how they were addressed;
5. As built drawings; and
6. Schedule indicating when any treatment systems will begin full scale operations.

**D. Corrective Measure Assessment Reports**

***The Corrective Measure Assessment Reports will be developed upon implementation of the Ground Water Restoration Workplan.***

The Corrective Measure Assessment Report contain an evaluation of the past and projected future effectiveness of the corrective measure in attaining the remedial objective of restoration of the contaminated ground water to the federal drinking water standards or the state water standards, or, subject to necessary approvals, to alternate clean-up standards based upon what is determined to be technically practicable, as

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

determined from all relevant data, including information obtained during the operation of the off-site and on-site containment systems. The evaluation shall follow EPA guidance in evaluating the performance of the ground water extraction system in meeting this objective. The Corrective Measure Assessment Report includes the following elements:

1. Synopsis of the corrective measure;
2. Describe the progress in attaining the remedial objectives of restoration of the contaminated ground water.
  - Determination of projected restoration time for the current corrective measure.
  - Description of the various inputs needed for a flow and transport model.
  - Description of progress in developing and verifying a flow and transport model that will assist in the evaluation of restoration of the aquifer.
  - Detailed discussion of what additional information, if any, is needed to evaluate restoration of the aquifer along with a description of why this information is needed in the evaluation.
  - Detailed plan of how and when this additional information, if needed, will be collected.
3. Summarize data obtained during the preceding time interval of systems operation and evaluate trends in the system operating conditions indicating how operation of the corrective measure compares to the remedial objectives;
  - Summary of samples and analysis from ground water monitoring network for all constituents of concern.
  - Summary of contaminants concentrations versus media standards (the more stringent of the Maximum Contaminant Level [MCL's] for drinking water established under the Safe Drinking Water Act or the maximum allowable contaminant concentrations in ground water set by the State of New Mexico Water Quality Control Commission [WQCC]).
  - Summary of concentration trends in ground water monitoring network wells for all constituents of concern.
  - Time-concentration plots for each of the ground water monitoring network wells.
  - Estimate of pore volume of the contaminant plume.
  - Estimate of contaminant mass-in-place.
  - Determination of rate of contaminant mass removal by current corrective measure.
  - Contaminant concentration plume maps.

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

- Comparison of the rate of contaminant mass removal to the dissolved and/or total contaminant mass-in-place.
- Description of cumulative mass removed by current system versus the total contaminant mass-in-place.
- 4. Summary of work accomplishments (e.g., performance levels achieved, total hours of treatment operation, total treated and/or excavated volumes, nature and volume of wastes generated, etc.);
  - Description of the number of pore volumes extracted by the current corrective measure.
  - Summary of samples and analysis of the treatment system influent and effluent.
- 5. Summary of significant activities that occurred during operations. Include a discussion of problems encountered and how they were addressed;
- 6. Summary of inspection findings (include copies of key inspection documents in appendices);
- 7. Summary of total operation and maintenance costs;
- 8. An evaluation of implementing post-construction refinements to the ground water extraction system such as, but not limited to:
  - adjusting the pumping rate in some or all of the ground water extraction wells;
  - installing additional extraction wells to facilitate or accelerate cleanup of the contaminant plume;
  - initiating a pulsed pumping schedule in some or all of the ground water extraction wells to eliminate flow stagnation areas, or otherwise facilitate recovery of contaminants from the aquifer;
  - discontinuing pumping at individual extraction wells where cleanup goals have been attained; monitoring of the aquifer would be continued to ensure that media cleanup goals are maintained; and
  - refining the treatment and disposal components of the system.

***The report should state whether the fate and transport model of the aquifer can be used to provide a useful estimate of the length of time required to cleanup the aquifer using alternate cleanup measures. If Sparton concludes that the model cannot presently***

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

*provide such useful estimates, it should provide a detailed discussion supporting its conclusion. If Sparton concludes that the model can provide useful estimates of the length of time required to clean up the aquifer using alternate cleanup measures, then Sparton shall evaluate alternatives such as those listed above. If Sparton concludes that one or more additional cleanup measures would significantly reduce the time and/or cost of aquifer restoration, then it should provide a detailed discussion of the basis for its conclusion and propose implementation of appropriate measures. If Sparton concludes that additional cleanup measures would not significantly reduce the time and/or cost of aquifer restoration, then it should provide a detailed discussion of the basis for its conclusion.*

9. An evaluation of implementing additional source control measures to further reduce the remaining source material in the aquifer and soil beneath the facility. Such measures could include the implementation of additional measures in the aquifer where possible NAPL contaminants remain relatively unaffected by ground water extraction.

Sparton may at any time request that EPA select an alternative and/or supplemental corrective measure(s). Sparton may also at any time submit a Technical Impracticability Demonstration to EPA. In addition to demonstrating technical impracticability, Respondent shall also submit an alternative remedial strategy that is: (1) technically practicable; (2) consistent with the overall objectives of the remedy; (3) controls the source(s) of the contamination; and (4) controls human and environmental exposure. An alternative remedial strategy shall be imposed if a determination of technical impracticability is made by EPA.

**E. Corrective Measure Completion Report**

***The Corrective Measure Completion Report will be developed during the implementation of the Ground Water Restoration Workplan.***

The purpose of the Corrective Measure Completion Report is to fully document how the Performance Standards have been satisfied and to justify why the corrective measure and/or monitoring may cease. The Corrective Measure Completion Report includes the following elements:

1. Synopsis of the corrective measure;

**ATTORNEY-CLIENT PRIVILEGED****Prepared for Counsel****Confidential Settlement Document-Not for Public Release****Inadmissible Under Federal Rules of Evidence****Prepared in Anticipation of Litigation**

2. Demonstration that the Performance Standards have been met. Include results of testing and/or monitoring, indicating how operation of the corrective measure compares to the completion criteria;
3. Summary of work accomplishments (e.g., performance levels achieved, total hours of treatment operation, total treated and/or excavated volumes, nature and volume of wastes generated, etc.);
4. Summary of significant activities that occurred during operations. Include a discussion of problems encountered and how they were addressed;
5. Summary of inspection findings (include copies of key inspection documents in appendices); and
6. Summary of total operation and maintenance costs.