



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

September 16, 1996

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

C.T. Corporation System
Registered Agent for Sparton Technology, Inc.
119 East Marcy
Santa Fe, NM 87501

Re: Initial Administrative Order under Section 3008(h) of RCRA
Sparton Technology, Inc., Docket No. RCRA-VI-001(h)-96-H
EPA I.D. No. NMD083212332

Dear Sir/Madam:

Enclosed is an Initial Resource Conservation and Recovery Act (RCRA) Section 3008(h) Administrative Order (Order) for Sparton Technology, Inc. (Sparton), Albuquerque, New Mexico. This Order has been developed pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 3008(h) of RCRA, 42 U.S.C. § 6928(h). The authority to issue this Order has been delegated to the Regional Administrator by EPA Delegation Nos. 8-31 and 8-32, dated April 16, 1985, and further delegated to the Director of the Compliance Assurance and Enforcement Division. The Order requires Sparton to implement the remedy selected by EPA in the Final Decision and Response to Comments document dated June 24, 1996.

As you know, EPA has attempted to negotiate a RCRA Section 3008(h) Administrative Order on Consent to implement the remedy selected by EPA. However, since Sparton has refused to implement the selected remedy, EPA is issuing this Initial Administrative Order.

We call your attention to Section XXVII of the Order entitled "Notice of Opportunity to Request a Hearing." Should you request such a hearing, your written request must be filed with the Regional Hearing Clerk within thirty (30) days after service of this Order. If Sparton fails to file a response and request for a hearing, such failure constitutes a binding admission of all allegations contained in the Order, a waiver of Sparton's right to hearing, and the Order becomes a Final



Administrative Order. Furthermore, failure or refusal to carry out the terms of the Order in a manner deemed satisfactory to EPA, subjects Sparton to a civil penalty in an amount not to exceed \$25,000 for each day of noncompliance.

You have the right to be represented by your attorney at any stage of the proceedings. Please be advised that the Rules of Practice at 40 C.F.R. § 24.09 prohibit unilateral discussions of the merits of the case with the Regional Administrator or the Presiding Officer after issuance of the Order.

If you have any questions regarding this matter, please address your correspondence to Evan Pearson, Senior Attorney (6RC-C), U.S. Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, Texas 75202-2733, or by telephone at (214) 665-8074.

We urge your prompt attention to this matter.

Sincerely yours,



Samuel Coleman, P.E.
Director
Compliance Assurance and
Enforcement Division

Enclosures

cc: Richard D. Mico, Sparton Technology, Inc.
R. Jan Appel, Sparton Corporation
Jim Harris, Thompson & Knight
Ana Marie Ortiz, New Mexico Environment Department
Gary O'Dea, City of Albuquerque
Charlie de Saillan, New Mexico Attorney General's Office
Steve Cary, New Mexico Office of Natural Resource Trustee

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY 1993 SEP 16 PM 3:03
REGION 6
DALLAS, TEXAS

REC'D MONTGOMERY
EPA REGION VI

IN THE MATTER OF:

SPARTON TECHNOLOGY, INC.

9621 COORS ROAD NW
ALBUQUERQUE, NM 87114

EPA I.D. NO. NMD083212332

RESPONDENT

U.S. EPA DOCKET NO.
RCRA-VI-001(h)-96-H

INITIAL ADMINISTRATIVE
ORDER UNDER SECTION
3008(H) OF THE RESOURCE
CONSERVATION AND RECOVERY
ACT, AS AMENDED
42 U.S.C. § 6928(H)

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I. JURISDICTION

1. This Initial Administrative Order (Order) is issued pursuant to the authority vested in the Administrator of the United States Environmental Protection Agency (EPA) by Section 3008(h) of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, (RCRA), and further amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. § 6928(h). The authority to issue this Order has been delegated to the Regional Administrator by EPA Delegation Nos. 8-31 and 8-32, dated April 16, 1985, and further delegated to the Director of the Compliance Assurance and Enforcement Division, Region 6 (Director).
2. This Order is issued to Sparton Technology, Inc. (Respondent), the owner and operator of the facility located at 9621 Coors Road NW, Albuquerque, New Mexico 87114 (Facility). This Order is based on the administrative record compiled by EPA and incorporated herein by reference. The administrative record has been filed with the Regional Hearing Clerk, and is available for review by Respondent and the public at EPA's Region 6 office at 1445 Ross Avenue, Dallas, Texas 75202-2733.

II. STATEMENT OF PURPOSE

1. The purpose of this Order is to require Respondent to:
(a) identify, investigate, and remediate the releases of hazardous wastes and/or hazardous waste constituents to the environment; (b) implement the corrective measures selected by EPA for the Facility; and (c) perform any other activities necessary to correct or evaluate actual or potential threats to human health and/or the environment resulting from the releases of hazardous waste and/or hazardous waste constituents at or from the Facility.
2. This Order requires Respondent to: (a) operate the existing on-site ground water extraction and treatment system and monitor existing ground water monitoring wells; (b) further characterize the extent of contamination in the ground water and vadose zone; (c) install and operate an on-site soil vapor extraction system; and (d) install and operate additional ground water extraction well(s) and a treatment and disposal system.

III. PARTIES BOUND

1. This Order is issued to Sparton Technology, Inc. (Respondent), the owner and operator of the Facility located at 9621 Coors Road NW, Albuquerque, New Mexico 87114.

2. This Order shall apply to and be binding upon Respondent, its officers, directors, employees, agents, receivers, successors and assigns, heirs, trustees, and all other persons, including, but not limited to, contractors, and consultants acting under or on behalf of Respondent in connection with the implementation of this Order.
3. No change in ownership, corporate, or partnership status relating to the Facility will in any way alter the status or responsibility of Respondent under this Order. Any conveyance of title, easement, or other interest in Respondent's Facility or a portion of Respondent's Facility shall not affect Respondent's obligations under this Order. Respondent shall be responsible for and liable for any failure to carry out all activities required of Respondent by this Order, irrespective of its use of employees, agents, contractors, or consultants to perform any such tasks.
4. Respondent shall provide a copy of this Order to all contractors, subcontractors, laboratories, and consultants retained to conduct or monitor any portion of the work performed pursuant to this Order within seven (7) days of the effective date of this Order or date of such retention of services, and shall condition all such contracts on compliance with the terms of this Order.
5. Any documents transferring ownership and/or operations of the Facility from Respondent to a successor-in-interest shall include written notice of this Order; however, Respondent shall, no less than thirty (30) days prior to transfer of ownership or operation of the Facility, provide written notice of this Order to its successor-in-interest, and written notice of said transfer of ownership and/or operation to EPA and the New Mexico Environment Department (NMED).

IV. FINDINGS OF FACT

1. Sparton Technology, Inc. (Respondent), is a corporation incorporated under the laws of the State of New Mexico.
2. Respondent is the owner and operator of a hazardous waste management facility (Facility) located at 9621 Coors Road NW, Albuquerque, Bernalillo County, New Mexico 87114.
3. Respondent is a generator of hazardous waste, and engaged in the treatment, storage, or disposal of hazardous waste at the Facility subject to the interim status requirements of 40 C.F.R. Part 265, and New Mexico's authorized RCRA program.

4. Respondent owned and operated the Facility as a hazardous waste management facility on or after November 19, 1980, the applicable date which renders facilities subject to the interim status requirements, or the requirement to have a permit, under Sections 3004 and 3005 of RCRA, 42 U.S.C. §§ 6924 and 6925.
5. Pursuant to Section 3010(a) of RCRA, 42 U.S.C. § 6930(a), Sparton Southwest, Inc. (the predecessor corporation to the Respondent) notified EPA of its hazardous waste activity. In its Notification dated August 12, 1980, Sparton Southwest, Inc. identified itself as a generator of hazardous waste, and as an owner and operator of a hazardous waste treatment, storage, or disposal facility located at 9621 Coors Road NW, Albuquerque, New Mexico.
6. In its Notification, Sparton Southwest, Inc. notified EPA that it handled the following hazardous waste:
 - a. Characteristic hazardous wastes identified at 40 C.F.R. Part 261, Subpart C: ignitable, corrosive, reactive, and toxic;
 - b. Hazardous wastes from non-specific sources identified at 40 C.F.R. § 261.31: F001, F002, F003, F005, F006, F007, F008, and F009; and
 - c. Commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products identified at 40 C.F.R. § 261.33(f): P030, P098, U002, U057, U108, U122, U134, U154, U159, U162, U220, U226, U228, U238, and U239.
7. Pursuant to Section 3005(e) of RCRA, 42 U.S.C. § 6925(e), on or about November 17, 1980, Sparton Southwest, Inc. submitted its RCRA Part A permit application, and identified itself as a Facility generating and treating, storing, or disposing of the following hazardous wastes:
 - a. Hazardous wastes from non-specific sources identified at 40 C.F.R. § 261.31: F001, F002, F003, F005, F006, F007, F008, and F009; and
 - b. Commercial chemical products, manufacturing chemical intermediates, or off-specification commercial chemical products identified at 40 C.F.R. § 261.33(f): U002, U122, U134, U159, U226, and U228.

8. On or about June 30, 1987, the Facility's interim status was terminated by the New Mexico Health and Environment Department.
9. From 1983 to 1988, one or more of the following hazardous wastes and/or hazardous waste constituents were detected in ground water monitoring wells at the Facility:
trichloroethylene, 1,1,1-trichloroethane,
1,1-dichloroethylene, methylene chloride,
tetrachloroethylene, toluene, benzene, and chromium.
10. On October 1, 1988, EPA and Respondent entered into a corrective action Consent Order (RFI/CMS Order), U.S. EPA Docket No. VI-004(h)-87-H, pursuant to Section 3008(h) of RCRA, 42 U.S.C. § 6928(h). The RFI/CMS Order required Respondent to conduct interim measures, a RCRA Facility Investigation (RFI), and a Corrective Measures Study (CMS) for the Facility.
11. On or about May 21, 1992, Respondent submitted a Final RFI Report to EPA for approval. EPA approved the Final RFI Report on July 1, 1992.
12. On or about December 8, 1995, EPA issued for public comment, a Statement of Basis which described the various remedial alternatives for the Facility. The Statement of Basis and the administrative record for the Facility were made available to the public for review and comment from December 8, 1995, to February 8, 1996. A public hearing to receive comments on the remedial alternatives was held on February 1, 1996.
13. Based on analyses of ground water samples collected in January 1996, trichloroethylene (TCE) contamination resulting from Facility operations ranges from 7,600 ppb at the Facility, 3,200 ppb near the center of the off-site contaminant plume, to less than 5 ppb at a distance of at least $\frac{1}{2}$ mile from the Facility.
14. The ground water contaminant plume originating from the Facility is in an aquifer utilized by the City of Albuquerque and New Mexico Utilities as a public drinking water supply. A public drinking water supply well, New Mexico Utilities Well No. 2, is approximately two (2) miles downgradient from the leading edge of the ground water contaminant plume.
15. On or about May 13, 1996, Respondent submitted a Final CMS Report to EPA for approval. EPA approved the Final CMS Report with concerns on June 24, 1996.

16. Section IV.A.3 and Task IX of the Corrective Action Plan (CAP) of the RFI/CMS Order provided that EPA would select the remedy for the Facility.
17. On June 24, 1996, EPA issued a Final Decision and Response to Comments (FDRTC) which identified the selected remedy for implementation at the Facility, and provided responses to all significant comments received at the public hearing, and all significant written comments received during the public comment period. The FDRTC (excluding the index to the administrative record) is attached as Exhibit A and incorporated by reference into this Order.
18. In the FDRTC, EPA concluded that due to the release of hazardous waste into the environment, corrective action is necessary to protect human health and the environment. EPA selected Alternative 4 - Expanded Ground Water Extraction and Soil Vapor Extraction, as the remedy for the Facility.
19. On June 24, 1996, EPA terminated the RFI/CMS Order.

V. CONCLUSIONS OF LAW AND DETERMINATIONS

1. Respondent is a "person" as that term is defined at Section 1004(15) of RCRA, 42 U.S.C. § 6903(15), and 40 C.F.R. § 260.10.
2. Respondent is the owner and operator of an "existing hazardous waste management facility" as that term is defined at 40 C.F.R. § 260.10.
3. Respondent was authorized to operate under interim status pursuant to Section 3005(e) of RCRA, 42 U.S.C. § 6925(e).
4. Certain wastes and constituents found at the Facility are "hazardous wastes" or "hazardous waste constituents" as those terms are defined or set forth by Section 1004(5) and 3001 of RCRA, 42 U.S.C. §§ 6903(5) and 6921, and 40 C.F.R. Part 261.
5. "Hazardous waste" or "hazardous waste constituents", as those terms are defined or set forth by Sections 1004(5) and 3001 of RCRA, 42 U.S.C. §§ 6903(15) and 6921, and 40 C.F.R. Part 261, were released into the environment from the Facility.
6. Based on the release of hazardous waste and/or hazardous waste constituents into the environment from the Facility, the Director has determined that the actions required by this Order are consistent with RCRA, and the actions ordered below are necessary to protect human health and/or the environment.

7. Based on the foregoing, it is hereby ORDERED that Respondent perform the actions set forth in this Order in the manner and by the dates specified therein.

VI. PROJECT MANAGER

1. Within ten (10) days of the effective date of this Order, EPA and Respondent shall each designate a Project Manager, and notify each other and the New Mexico Environment Department (NMED) in writing of the Project Manager it has selected. Each Project Manager shall be responsible for overseeing the implementation of this Order. The EPA Project Manager will be EPA's designated representative for the Facility. Except as otherwise provided in this Order, all communications between Respondent and EPA, including all documents, reports, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed through the Project Managers, or counsel.
2. The Parties shall provide written notice within five (5) days after changing Project Managers.
3. The absence of the EPA Project Manager from the Facility shall not be cause for the stoppage or delay of work.

VII. WORK TO BE PERFORMED

Respondent shall undertake, continue to take, and complete each of the following actions to the satisfaction of EPA and in accordance with the terms, procedures, and schedules set forth in Attachment I - Corrective Action Plan (CAP). The CAP is hereby incorporated into this Order by reference as if reproduced in full herein.

TASK I: OPERATION OF EXISTING ON-SITE GROUND WATER EXTRACTION SYSTEM AND TREATMENT SYSTEM AND CONTINUED MONITORING OF EXISTING GROUND WATER MONITORING WELLS

1. Effective upon the date of this Order, Respondent shall operate, and maintain continuous operation of the existing ground water recovery well network and treatment system at the Facility. This ground water recovery well network consists of the following recovery wells: PW-1, MW-18, MW-23, MW-24, MW-25, MW-26, MW-27, and MW-28. Respondent shall perform the reporting and sampling and analyses set forth in the CAP. Treatment and disposal of recovered waters under this provision shall be performed in compliance with all Federal, State, or local laws, regulations, permits, or ordinances. Operation of the existing ground water recovery well network and treatment system shall be incorporated into, and modified as necessary to be

consistent with, the operation of the Ground Water Extraction Measure set forth in Task V of the CAP.

2. Within twenty (20) days of the effective date of this Order, Respondent shall submit a Ground Water Monitoring Plan for the existing on-site and off-site ground water monitoring wells, capable of determining: (a) the concentration of the hazardous waste or hazardous waste constituents in the ground water; and (b) the ground water elevations. EPA will approve or modify the Ground Water Monitoring Plan. The Ground Water Monitoring Plan, as approved or modified by EPA, shall become the Final Ground Water Monitoring Plan for the existing on-site and off-site ground water monitoring wells.

Effective upon the 10th day of the first full month following EPA approval of the Ground Water Monitoring Plan, and every three months thereafter, Respondent shall conduct quarterly sampling and analyses of the existing on-site and off-site ground water monitoring wells.

3. Concurrent with the submission of the Operations and Maintenance Plan for the Ground Water Extraction Corrective Measure in Task V.B.4 of the CAP, Respondent shall submit a revised Ground Water Monitoring Plan for integration into the Operations and Monitoring Plan for the Ground Water Extraction Corrective Measure. EPA will approve or modify the revised Ground Water Monitoring Plan. The revised Ground Water Monitoring Plan, as approved or modified by EPA, shall become the Final Ground Water Monitoring Plan for the ground water monitoring well system.

TASK II: HEALTH AND SAFETY PLAN

4. Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Health and Safety Plan to EPA for all field activity associated with the Vadose Zone Investigation Workplan and the Ground Water Investigation Workplan. EPA does not approve or disapprove the Health and Safety Plan, but does review it to assure its existence.

TASK III: PUBLIC INVOLVEMENT PLAN

5. Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Public Involvement Plan to EPA for review and approval. A schedule for community relations activities shall be included in the Public Involvement Plan. EPA will approve or modify the Public Involvement Plan. The Public Involvement Plan, as approved or modified by EPA, shall become the Final Public Involvement Plan.

TASK IV: SOIL VAPOR EXTRACTION CORRECTIVE MEASURE

6. Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Vadose Zone Investigation Workplan to EPA for review and approval. EPA will approve or modify the Vadose Zone Investigation Workplan. The Vadose Zone Investigation Workplan, as approved or modified by EPA, shall become the Final Vadose Zone Investigation Workplan. Respondent shall implement the Final Vadose Zone Investigation Workplan according to the schedule set forth in the Workplan. The Vadose Zone Investigation Workplan shall, at a minimum, include the following plans: (1) a Project Management Plan; (2) a Data Collection Quality Assurance Plan; and (3) a Data Management Plan.
7. Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit a Vadose Zone Investigation Report to EPA for review and approval. EPA will approve or modify the Vadose Zone Investigation Report. The Vadose Zone Investigation Report, as approved or modified by EPA, shall become the Final Vadose Zone Investigation Report.
8. Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit the Design Plans and Specifications for the Soil Vapor Extraction Corrective Measure to EPA for review and approval. EPA will approve or modify the design package. The design package, as approved or modified by EPA, shall become the Final Design Plans and Specifications.
9. Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit a Construction Workplan for the Soil Vapor Extraction Corrective Measure to EPA for review and approval. EPA will approve or modify the Construction Workplan. The Construction Workplan, as approved or modified by EPA, shall become the Final Construction Workplan.
10. Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit an Operations and Maintenance (O&M) Plan for the Soil Vapor Extraction Project to EPA for review and approval. EPA will approve or modify the O&M Plan. The O&M Plan, as approved or modified by EPA, shall become the Final O&M Plan.
11. Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation

Workplan, Respondent shall submit an updated Health and Safety Plan for the Soil Vapor Extraction Corrective Measure to EPA. EPA does not approve or disapprove the Health and Safety Plan, but does review it to assure its existence. The Health and Safety Plan shall be developed as a stand alone document.

12. Upon receipt of written notification from EPA, Respondent shall commence the construction process for the Soil Vapor Extraction Corrective Measure and implement the Construction Workplan in accordance with the schedule and provisions contained therein.
13. Within ninety (90) days following completion of the construction of the Soil Vapor Extraction Corrective Measure, Respondent shall submit a Construction Completion Report to EPA for review and approval. EPA will approve or modify the Construction Completion Report. The Construction Completion Report, as approved or modified by EPA, shall become the Final Construction Completion Report.
14. Respondent shall prepare and submit a Corrective Measure Completion Report to EPA for review and approval when the corrective measure completion criteria have been achieved for the Soil Vapor Extraction Corrective Measure. EPA will approve or modify the Corrective Measure Completion Report. The Corrective Measure Completion Report, as approved or modified by EPA, shall become the Final Corrective Measure Completion Report.

TASK V: GROUND WATER EXTRACTION CORRECTIVE MEASURE

15. Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Ground Water Investigation Workplan to EPA for review and approval. EPA will approve or modify the Ground Water Investigation Workplan. The Ground Water Investigation Workplan, as approved or modified by EPA, shall become the Final Ground Water Investigation Workplan. Respondent shall implement the Final Ground Water Investigation Workplan according to the schedule set forth in the Workplan. The Ground Water Investigation Workplan shall, at a minimum, include the following plans: (1) a Project Management Plan; (2) a Data Collection Quality Assurance Plan; and (3) a Data Management Plan.
16. Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit a Ground Water Investigation Report to EPA for review and approval. EPA will approve or modify the Ground Water Investigation Report. The Ground Water Investigation Report, as approved

or modified by EPA, shall become the Final Ground Water Investigation Report.

17. Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit the Design Plans and Specifications for the Ground Water Extraction Corrective Measure to EPA for review and approval. EPA will approve or modify the design package. The design package, as approved or modified by EPA, shall become the Final Design Plans and Specifications.
18. Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit a Construction Workplan for the Ground Water Extraction Corrective Measure to EPA for review and approval. EPA will approve or modify the Construction Workplan. The Construction Workplan, as approved or modified by EPA, shall become the Final Construction Workplan.
19. Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit an Operations and Maintenance (O&M) Plan for the Ground Water Extraction Corrective Measure to EPA for review and approval. EPA will approve or modify the O&M Plan. The O&M Plan, as approved or modified by EPA, shall become the Final O&M Plan.
20. Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit an updated Health and Safety Plan for the Ground Water Extraction Corrective Measure to EPA. EPA does not approve or disapprove the Health and Safety Plan, but does review it to assure its existence. The Health and Safety Plan shall be developed as a stand alone document.
21. Upon receipt of written notification from EPA, Respondent shall commence the construction process for the Ground Water Extraction Corrective Measure and implement the Construction Workplan in accordance with the schedule and provisions contained therein.
22. Within ninety (90) days following completion of the construction of the Ground Water Extraction Corrective Measure, and/or upon written notice from EPA regarding completion of the construction of one or more components in the Ground Water Extraction Corrective Measure (e.g., containment well system, treatment system, etc.), Respondent shall submit a Construction Completion Report to

EPA for review and approval. EPA will approve or modify the Construction Completion Report. The Construction Completion Report, as approved or modified by EPA, shall become the Final Construction Completion Report.

23. Within sixty (60) days of receipt of written notification from EPA, Respondent shall submit a Corrective Measure Assessment Report for the Ground Water Extraction Corrective Measure to EPA for review and approval. The Corrective Measure Assessment Report shall thereafter be submitted to EPA for review and approval annually for a period of two (2) years, and every five years thereafter until this Order is terminated pursuant to Section XXVI of this Order. EPA will approve or modify the Corrective Measure Assessment Report. The Corrective Measure Assessment Report, as approved or modified by EPA, shall become the Final Corrective Measure Assessment Report for the time period covered by the Report.
24. Respondent shall prepare and submit a Corrective Measure Completion Report to EPA for review and approval when the corrective measure completion criteria have been achieved for the Ground Water Extraction Corrective Measure. EPA will approve or modify the Corrective Measure Completion Report. The Corrective Measure Completion Report, as approved or modified by EPA, shall become the Final Corrective Measure Completion Report.

VIII. SUBMISSIONS / AGENCY APPROVAL / ADDITIONAL WORK

1. Within five (5) days of receipt of approval or modification by EPA of any Workplan(s), Respondent shall commence work and implement the tasks required by the Workplan(s), in accordance with the standards, specifications, and schedule stated in the Workplan(s), as approved or modified by EPA.
2. Beginning with the month following the effective date of this Order, Respondent shall provide EPA with the progress reports every month, due on the tenth (10th) day of the following month. The progress reports shall conform to requirements in relevant Scopes of Work contained in the CAP.
3. Respondent shall provide EPA with the results of all sampling and tests or other data generated by its employees, contractors, and/or consultants which in any way relates to the Facility and/or off-site contamination, regardless of whether such sampling or testing is required by this Order, in the monthly progress reports, as specified in Sections VIII.2 and X of this Order.
4. EPA will review all reports, workplans, or other submittals required under this Order, and notify Respondent in writing

of EPA's approval or modification of the deliverables or any part thereof. Upon EPA approval or modification, the submittal shall be deemed incorporated into and part of this Order.

Notwithstanding the foregoing, EPA reserves the right to disapprove of, or provide comments on, any deliverable or any part thereof. Within thirty (30) days of receipt of EPA's disapproval or comments on any deliverable, Respondent shall address the deficiencies to EPA's satisfaction and submit a revised submittal. EPA shall approve or modify the revised submittal. Upon EPA approval or modification, the submittal shall be deemed incorporated into and part of this Order.

5. Any noncompliance with such EPA approved plans, reports, specifications, schedules, and attachments shall be construed as a violation(s) of the terms of this Order, and subject to the penalty provisions of Section XVI. Oral advice or approvals given by EPA representatives shall not relieve Respondent of its obligation to obtain any formal, written approvals required by this Order.
6. Four (4) copies of all deliverables shall be sent to the EPA Project Manager. An additional one (1) copy shall be sent to NMED, addressed to the following:

Ed Kelly, Director
Water and Waste Management Division
New Mexico Environment Department
P.O. Box 26110
Santa Fe, New Mexico 87502-6110

Unless otherwise specified in this Order, or otherwise notified in writing by EPA, all notifications to NMED shall be made to the aforementioned person.

7. In all instances which this Order requires written submissions to EPA, each submission must be accompanied by the following certification signed by a "responsible official":

I certify that the information contained in or accompanying this submission is true, accurate, and complete. As to those identified portions of this submission for which I cannot personally verify the truth and accuracy, I certify as the Facility Official having supervisory responsibility for the person(s) who, acting upon my direct instructions, made the verification, that this information is true, accurate, and complete.

For the purpose of this certification, a "responsible official" means person in charge of a principal Facility function, or any other person who performs similar decision-making functions for the Facility.

8. EPA may determine, or Respondent may propose that certain tasks, including investigatory work, engineering evaluation, procedure/methodology modifications, or construction are necessary in addition to or in lieu of the tasks included in any EPA-approved workplan, when such additional work is necessary to meet the purposes set forth in Section II: Statement of Purpose. If EPA determines that Respondent shall perform additional work, EPA will notify Respondent in writing and specify the basis for its determination that the additional work is necessary. Within fifteen (15) days after the receipt of such determination, Respondent shall have the opportunity to meet or confer with EPA to discuss the additional work. If required by EPA, Respondent shall submit for EPA approval, a workplan for the additional work. EPA will specify the contents of such workplan. Such workplan shall be submitted within thirty (30) days of receipt of EPA's determination that additional work is necessary, or according to an alternative schedule established by EPA. Upon approval or modification of a workplan by EPA, Respondent shall implement it in accordance with the schedule and provisions contained therein.

IX. FACILITY ACCESS AND RECORD RETENTION

1. EPA and any EPA authorized-representative(s), are authorized, allowed, and permitted pursuant to Section 3007(a) of RCRA, 42 U.S.C. § 6927(a), to enter and freely move about all property at the Facility, and all other property owned or operated by Respondent which in any way relates to the implementation of the corrective measures, at all reasonable times, for the purposes of enforcing the requirements of RCRA and this Order, including:
 - a. interviewing site personnel and contractors, inspecting records, operating logs, and contracts related to the Facility;
 - b. reviewing the progress of Respondent in carrying out the terms of this Order;
 - c. conducting such tests as EPA deems necessary;
 - d. using a camera, video camcorder, sound recorder, or other documentary type equipment; and
 - e. verifying the reports and data submitted to EPA by Respondent.

2. Respondent shall permit EPA to inspect and copy all documents, and other writings, including all sampling and monitoring data, which in any way pertains to work undertaken pursuant to this Order.
3. To the extent that work being performed pursuant to this Order must be done beyond the Facility property boundary, Respondent shall use its best efforts to obtain site access agreements from the present owners to perform work pursuant to this Order no later than thirty (30) days from the date that the need for such access becomes known to Respondent. Best efforts shall include, but not be limited to, requiring Respondent to pay reasonable rental costs and compensation for losses sustained by the owner or occupant of the realty. Access agreements shall provide access to Respondent, its contractor(s), the United States, EPA, the State of New Mexico, NMED, and their representatives, including contractors. Any such access agreements shall be submitted to the Project Manager and incorporated by reference into this Order. In the event that site access agreements are not obtained within thirty (30) days of approval of any workplan for which access is required, or of the date that the need for access became known to Respondent, Respondent shall notify EPA by telephone within twenty-four (24) hours after expiration of the above thirty (30) day period, and shall within seven (7) days of the oral notification, submit a complete report to EPA in writing regarding its efforts to obtain access agreements, including the names, dates, addresses, and phone numbers of the person(s) it contacted in order to obtain access. If EPA is able to obtain access, Respondent shall perform work described in this Order.
4. Nothing in this subsection is intended to limit, affect or otherwise constrain EPA's or NMED's right of access to property pursuant to applicable law.
5. All data, information, and records created or maintained in connection with the implementation of work under this Order, including Respondent's employees and Respondent's contractors, shall be made available to EPA upon request. Respondent shall retain all such data, information, or records for five (5) years after termination of the Order, and provide notification to EPA and NMED sixty (60) days prior to the destruction of any such documents.

X. SAMPLING AND DATA/DOCUMENT AVAILABILITY

1. Respondent shall submit to EPA and NMED the results of all sampling and tests or other data generated by its employees, contractors, and/or consultants which in any way relates to the Facility and/or off-site contamination, regardless of whether such sampling or testing is required by this Order.

Data which has not yet undergone QA/QC, shall be submitted with the monthly progress reports stamped "Subject to Revision".

2. Respondent shall submit these results in monthly progress reports as described in Task VI of the CAP, and Section VIII.2 of this Order, or upon request of the Project Manager.
3. Respondent shall specify the name and address of the laboratory to be used for sample analysis. EPA reserves the right to conduct a performance and QA/QC audit of the above specified laboratory. If the audit reveals deficiencies in lab performance or QA/QC, resampling and analysis shall be required.
4. At the request of EPA, Respondent shall allow split or duplicate samples to be collected by EPA, and/or its authorized representatives, of any samples collected by Respondent. Respondent shall notify EPA not less than fourteen (14) days in advance of any field sampling or installation activity.

XI. QUALITY ASSURANCE

Throughout all sample collections and analysis activities, Respondent shall use EPA-approved quality assurance, quality control, and chain-of-custody procedures, which shall be part of proposed and approved plans. In addition, Respondent shall:

1. Follow all EPA guidance for sampling and analysis unless determined by EPA not to be applicable;
2. Ensure that EPA and NMED receive written notification not less than fourteen (14) days in advance of any field sampling or installation activity;
3. Ensure that EPA receives written notification not less than fourteen (14) days in advance which laboratories will be used by Respondent, and use its best efforts to ensure that EPA personnel and EPA authorized representatives have reasonable access to the laboratories and personnel used for analysis;
4. Ensure that laboratories used by Respondent for analyses perform such analyses according to EPA methods (SW-846, 3rd Edition or as superseded) or other methods deemed satisfactory to EPA. If methods other than EPA methods are to be used, Respondent shall submit all protocols to be used for analyses to EPA for approval at least thirty (30) days prior to the commencement of analyses; and

5. Ensure that laboratories used by Respondent for analyses participate in a quality assurance/quality control program equivalent to that which is followed by EPA. As part of such a program, and upon request by EPA, such laboratories shall perform analysis on known samples provided by EPA to demonstrate the quality of the analytical data.

XII. DISPUTE RESOLUTION

1. The Parties to this Order shall make reasonable efforts to informally resolve disputes at the Project Manager or immediate supervisor level. If resolution can not be achieved informally, the procedures of this section shall be implemented to resolve a dispute. The failure to invoke these Dispute Resolution procedures shall constitute a waiver of the right to contest a specific requirement of this Order.
2. If Respondent disagrees, in whole or in part, with any EPA disapproval, modification of a submittal, decision, or directive made by EPA pursuant to this Order, Respondent shall notify the Chief of the Hazardous Waste Enforcement Branch (Branch Chief) or his successor, in writing of its objections and the basis therefore within ten (10) days of receipt of EPA's disapproval, modification, decision, or directive. Said notice shall set forth the specific points of the dispute, the position Respondent is maintaining should be adopted as consistent with the requirements of this Order, the basis for Respondent's position, and any matters which it considers necessary for EPA's determination. Within ten (10) days of EPA's receipt of such written notice, the Branch Chief shall provide to Respondent his decision on the pending dispute.
3. EPA's decision pursuant to paragraph two (2) of this Section shall be binding upon both Parties to this Order, unless within ten (10) days of receipt of such written notice, Respondent notifies EPA in writing of its continued objection(s), and requests the Director, or his designee, to convene an informal conference for the purpose of discussing Respondent's objections and the reasons for EPA's determination. The Director shall issue a written decision within ten (10) days from the date of the informal conference, which shall be binding on both Parties to this Order. The written decision will be incorporated by reference into this Order.
4. In any dispute, Respondent shall have the burden of showing that EPA's position, including without limitation, any interpretation of the terms and conditions of this Order, and of applicable Federal and State law and regulations, was

arbitrary and capricious, and not in accordance with the law.

5. The existence of a dispute as defined herein, and EPA's consideration of such matters as placed into dispute, shall not excuse, toll, or suspend any compliance obligation or deadline required pursuant to this Order.

XIII. RESERVATION OF RIGHTS

1. EPA expressly reserves all statutory and regulatory powers, authorities, rights, remedies, both legal and equitable, which may pertain to Respondent's failure to comply with any of the requirements of this Order, including without limitation, the assessment of penalties under Section 3008(h)(2) of RCRA, 42 U.S.C. § 6928(h)(2). This Order shall not be construed as a waiver or limitation of any rights, remedies, powers and/or authorities, civil or criminal, which EPA has under RCRA, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), the Safe Drinking Water Act (SDWA), or any other statutory, regulatory, or common law enforcement authority of the United States.
2. EPA reserves the right to perform any portion of the work consented to herein, or any additional site characterization, feasibility study, and remedial work as it deems necessary to protect human health and/or the environment. EPA may exercise its authority under CERCLA to undertake response actions at any time. In any event, the United States reserves its right to seek reimbursement from Respondent for costs incurred by the United States. Notwithstanding compliance with the terms of this Order, Respondent is not released from liability, if any, for the costs of any response actions taken or authorized by EPA.
3. This Order shall not be construed as a ruling or determination of any issue related to any Federal, State, or local permit whether required in order to implement this Order, or required in order to continue or alter operations of the Facility (including, but not limited to, construction, operation, or closure permits required under RCRA), and Respondent shall remain subject to all such permitting requirements. EPA's approval of any workplan does not constitute a warranty or representation that the workplans will achieve the required cleanup or performance standards. Compliance by Respondent with the terms of this Order shall not relieve Respondent of its obligations to comply with RCRA, or any other applicable Federal, State, or local laws, regulations, permits, and ordinances.

4. Nothing in this Order is intended to release or waive any claim, cause of action, demand, or defense in law or equity, administrative or judicial, that any party to this Order may have against any person(s) or entity not a party to this Order, or that any person or entity not a party to this Order may have against any party to this Order.
5. EPA expressly reserves all rights and defenses that it may have, including the right both to disapprove of work performed by Respondent pursuant to this Order, and to order that Respondent perform additional tasks.
6. In any action brought by EPA for a violation of this Order, Respondent shall bear the burden of proving that EPA's actions were arbitrary and capricious and not in accordance with the law.
7. If EPA determines that activities in compliance or noncompliance with this Order have caused or may cause a release of hazardous waste and/or hazardous waste constituents, or is a threat to human health or the environment, or that Respondent is not capable of undertaking any studies or corrective measure ordered, EPA may order Respondent to discontinue work being conducted pursuant to this Order for such period of time as EPA determines may be needed to abate any such releases or threats, and/or to undertake any action which EPA determines is necessary to abate such releases or threats. Failure to comply with EPA's stop work order may result in a penalty of not to exceed \$25,000 per day of continued non-compliance with EPA's stop work order, pursuant to Section 3008(h)(2) of RCRA, 42 U.S.C. § 6928(h)(2).
8. In the event EPA suspends the work or any other activity at the Facility, EPA may extend affected schedules under this Order for a period of time equal to that of the suspension of the Work or other activities, plus reasonable additional time for resumption of activities. Any extensions in the schedules set out in this Order or its attachments must be made by EPA in writing, and incorporated by reference into this Order.

XIV. FINANCIAL ASSURANCE

1. Within thirty (30) days of the effective date of this Order, Respondent shall submit to EPA for review and approval, an assurance of its financial ability to meet the present worth cost estimate for Alternative 4 - Expanded Ground Water Extraction and Soil Vapor Extraction (Without Ion Exchange for Metals Removal), as described in the Final Decision and Response to Comments document (Exhibit A). Respondent's financial assurance shall be in one or a combination of the

following forms: (a) a performance or surety bond; (b) a letter of credit from an FDIC regulated financial institution; (c) a corporate guarantee by a third party; (d) an escrow performance guarantee account; (e) a trust fund; or (f) a financial test which allows EPA to determine that Respondent has sufficient financial assets available to perform the requirements of the Order. Respondent shall utilize 40 C.F.R. Part 265, Subpart H, as guidance in preparing the financial assurance submittal.

2. Concurrent with the submittal of the Construction Workplan for the Ground Water Extraction Corrective Measure (Task V.B.3), Respondent shall submit to EPA for review and approval, an updated assurance of its financial ability to meet the current cost estimate for the Corrective Measures Implementation, including both capital costs and operation and maintenance costs. Respondent's financial assurance shall be in one of the forms set forth in Paragraph 1 of this Section.
3. If Respondent chooses one or a combination of the instruments described in Paragraphs 1(a) through 1(e) of this Section, Respondent shall submit a copy of the instrument(s), and describe the nature and extent to which the instrument(s) is available for access by EPA for the purpose of ensuring the completion of all requirements of this Order. If Respondent chooses the instrument described in Paragraph 1(f) of this Section, Respondent shall submit audited financial reports or other reliable evidence, as deemed appropriate by EPA, of Respondent's financial assets.
4. EPA shall review the submittals described in Paragraphs 1, 2, and 3 of this Section, and shall provide written notice to Respondent as to the adequacy of the existing financial assurance measures, and shall indicate what additional financial assurances, if any, must be provided by Respondent to ensure compliance with the terms of this Order.
5. Within thirty (30) days of receipt of EPA's notice that Respondent's financial assurance measures are inadequate, Respondent shall establish additional financial assurances according to the terms provided in said notice, and submit the additional financial assurances to EPA for review and approval.
6. Annually, on the anniversary of EPA's approval of the financial assurance required by this Section, Respondent shall submit an updated financial assurance, as described in Paragraphs 2 and 3 of this Section, that accounts for the rate of inflation. EPA will follow the procedures in Paragraphs 4 and 5 of this Section to determine if

Respondent's updated financial assurance measures are adequate.

7. In the event that Respondent determines at any time that it is unable, or reasonably expects that it will be unable to maintain the financial assurance provided pursuant to this Section, Respondent shall obtain and submit to EPA for approval, one or a combination of the other forms of financial assurance listed in Paragraph 1 of this Section within thirty (30) days of the earlier of: (a) the event that causes such inability; or (b) receipt of information that gives rise to the reasonable expectation of such inability.
8. Respondent's inability to demonstrate financial ability to complete the Corrective Measures Implementation shall not excuse performance of any activities required under this Order.
9. This Order in no way negates Respondent's obligation to establish and/or maintain financial assurances for closure care, post-closure care, and liability requirements under 40 C.F.R. Part 265, Subpart H.

XV. INDEMNIFICATION OF THE UNITED STATES

Respondent shall indemnify, save, and hold harmless the United States, its agencies, departments, agents, and employees, from any and all claims or causes of action arising from or on account of acts or omissions of Respondent or its officers, directors, employees, agents, receivers, successors and assigns, heirs, trustees, contractors, and consultants in carrying out activities required by this Order. This indemnification shall not be construed in any way as affecting or limiting the rights or obligations of Respondent or the United States under their various contracts.

XVI. PENALTY PROVISIONS

Failure or refusal to carry out the terms of this Order in a manner deemed satisfactory to EPA may subject Respondent to a civil penalty in an amount not to exceed \$25,000 for each day of non-compliance with this Order, in accordance with Section 3008(h)(2) of RCRA, 42 U.S.C. § 6928(h)(2).

XVII. OTHER APPLICABLE LAWS

All actions required to be taken pursuant to this Order shall be undertaken in accordance with the requirements of all applicable Federal, State, and local laws, regulations, permits, and ordinances. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and

regulations. This Order does not relieve Respondent of any duty to obtain any Federal, State, or local permits needed to carry out its terms.

XVIII. REPORTING AND PUBLIC ACCESS TO DOCUMENTS AND SAMPLING DATA

1. Respondent may assert a business confidentiality claim covering all or part of any information submitted to EPA pursuant to this Order. Analytical data generated pursuant to this Order shall not be claimed as confidential. Confidentiality claims shall be submitted to EPA in accordance with the procedures outlined in 40 C.F.R. Part 2 [originally published in the Federal Register at 41 Fed. Reg. 36902 (September 1, 1976)], in particular, 40 C.F.R. § 2.203(b), and shall include a written statement explaining how the information claimed to be confidential meets the substantive criteria for use in confidentiality determinations found in 40 C.F.R. § 2.208, or such claim shall be deemed waived. If EPA approves the claim, EPA will afford the information confidential status, as specified in 40 C.F.R. Part 2, Subpart B. Information determined not to be confidential may be made available to the public without further notice to Respondent. If Respondent makes no claim of confidentiality for information submitted pursuant to this Order, EPA may make the information available without further notice to Respondent.
2. If Respondent asserts a business confidentiality claim, it shall clearly mark each page of each document included in its claim with the term "Confidential", and shall provide a redacted version of the information with all confidential business information deleted.
3. The information requested by EPA by this Order is not subject to the Paperwork Reduction Act of 1980, as amended, 44 U.S.C. § 3501 et seq.

XIX. OTHER CLAIMS

Nothing in this Order shall constitute or be construed as a release from any claim, cause of action, demand, or defense in law or equity, against any person, firm, partnership, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous waste constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or migrating from the Facility. Additionally, this Order does not constitute any decision on preauthorization of funds under Section 111(a)(2) of CERCLA, 42 U.S.C. § 9611(a)(2).

XX. SUBSEQUENT MODIFICATION OF ORDER

1. This Order may be modified by EPA to ensure protection of human health and/or the environment. Such amendments shall be in writing, and shall be effective and incorporated into this Order thirty (30) days after service of the amendment on Respondent, unless Respondent files an objection to the modification with EPA and the Regional Hearing Clerk. 40 C.F.R. Part 24 shall govern the proceedings under this section, and the hearing shall be limited to the scope of the proposed amendment.
2. This Order may also be modified by mutual agreement of EPA and Respondent. Any agreed modifications shall be in writing, signed by both parties, shall have as their effective date the date on which they are signed by EPA, and shall be incorporated into this Order. Upon request of Respondent, EPA may extend the deadlines set forth in this Order.

XXI. FINAL AGENCY ACTION

Notwithstanding any other provision of this Order, no action or decision by EPA pursuant to this Order, shall constitute final agency action giving rise to any right of judicial review prior to EPA's initiation of a judicial action to enforce this Order, including an action for penalties or an action to compel Respondent's compliance with the terms and conditions of this Order.

XXII. SURVIVABILITY/PERMIT INTEGRATION

Except as otherwise expressly provided in this section, this Order shall survive the issuance or denial of a RCRA permit or post-closure order for the Facility, and this Order shall continue in full force and effect after either the issuance or denial of such permit or order. Accordingly, Respondent shall continue to be liable for the performance of obligations under this Order notwithstanding the issuance or denial of such permit or order. If the Facility is issued a permit or order, and that permit or order expressly incorporates all or a part of the requirements of this Order, or expressly states that its requirements are intended to replace some or all of the requirements of this Order, Respondent may request a modification of this Order and shall, with EPA approval, be relieved of liability under this Order for those specific obligations.

XXIII. STATEMENT OF SEVERABILITY

If any provision or authority of this Order, or the application of this Order to any party or circumstances, is held by any judicial or administrative authority to be invalid, the

application of such provisions to other Parties or circumstances and the remainder of the Order shall not be effected thereby.

XXIV. PARTICIPATION IN COMMUNITY RELATIONS ACTIVITIES

Respondent shall be given notice of, provide support, and shall participate in public meetings, as appropriate, which may be held or sponsored by EPA to explain activities at or concerning the Facility.

XXV. COSTS

Each party shall bear its own costs and attorneys' fees.

XXVI. TERMINATION AND SATISFACTION

1. Respondent may seek termination of this Order by submitting to EPA a written document which indicates Respondent's compliance with all requirements of this Order, and the associated dates of approval correspondence from EPA. The provisions of this Order shall be deemed satisfied upon Respondent's and EPA's execution of an "Acknowledgment of Termination and Agreement for Record Preservation and Reservation of Rights" (Acknowledgment). The Acknowledgment shall specify that Respondent has demonstrated to the satisfaction of EPA that the terms of this Order, including any additional tasks determined by EPA to be required pursuant to this Order, have been satisfactorily completed. Respondent's execution of the Acknowledgment will affirm Respondent's continuing obligation: (1) to preserve all records as required in Section IX - Facility Access and Record Retention; and (2) to recognize EPA's reservation of rights as provided in Section XIII - Reservation of Rights, after all other requirements of the Order are satisfied.
2. This Order may also be terminated upon Respondent's receipt of written notice from EPA that Respondent has demonstrated to the satisfaction of EPA, that the terms of the Order, including any additional tasks determined by EPA to be required pursuant to this Order, have been satisfactorily completed. This notice shall also affirm Respondent's continuing obligation: (1) to preserve all records as required in Section IX - Facility Access and Record Retention; and (2) recognize EPA's reservation of rights as provided in Section XIII - Reservation of Rights.

XXVII. NOTICE OF OPPORTUNITY TO REQUEST A HEARING

1. In accordance with Section 3008(b) of RCRA, 42 U.S.C. § 6928(b), and 40 C.F.R. § 24.05(a), this Initial Administrative Order becomes a Final Administrative Order thirty (30) days after service of the Order, unless Respondent files with a response and requests a hearing with

the Regional Hearing Clerk. The response to the initial administrative order and request for a hearing must be in writing and mailed to, or personally served on the following:

Regional Hearing Clerk (6C)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

2. A copy of the response and request for a hearing, if any, and copies of all subsequent documents filed in this action shall be sent to the following:

Evan L. Pearson
Senior Attorney (6RC-C)
U.S. Environmental Protection Agency
Region 6
1445 Ross Avenue
Dallas, Texas 75202-2733

3. This section constitutes notice of Respondent's right to request a hearing with respect to any issue of material fact or the appropriateness of the proposed corrective action, in accordance with 40 C.F.R. § 24.02(c)(3).
4. The response to the Order shall specify each factual or legal determination, or relief provision in the Initial Administrative Order Respondent disputes, and shall briefly indicate the basis upon which it disputes such determination or provision.
5. The hearing, if requested, will be conducted in accordance with the provisions of 40 C.F.R. Part 24. A copy of these rules is enclosed.
6. Respondent's failure to file a response and request for a hearing within thirty (30) days after service of this Order shall constitute a binding admission of all allegations contained in the Order, and a waiver of Respondent's right to a hearing, and this Order shall become a Final Administrative Order.

XXVIII. SETTLEMENT CONFERENCE

1. Whether or not Respondent requests a hearing, it may confer with EPA concerning settlement. EPA encourages settlement consistent with the provisions and objectives of RCRA. A request for a settlement conference does not extend the thirty (30) days period during which the response and request for a hearing must be filed. The settlement

conference procedure may be pursued as an alternative to, and simultaneously, with the formal hearing procedures.

2. To explore the possibility of settlement in this matter, address your correspondence to Evan L. Pearson, Senior Attorney (6RC-C), U.S. Environmental Protection Agency, Region 6, 1445 Ross Avenue, Dallas, Texas 75202-2733, or by telephone call (214) 665-8074.

XXIX. EFFECTIVE DATE

This Order shall become effective as provided in Section 3008(b) of RCRA, 42 U.S.C. § 6928(b), and 40 C.F.R. Part 24.

IT IS SO ORDERED:

Dated: 9/16/96

By: _____

Samuel Coleman

Samuel Coleman, P.E.

Director

Compliance Assurance and Enforcement
Division

U.S. Environmental Protection Agency
Region 6

1445 Ross Avenue

Dallas, Texas 75202-2733

CERTIFICATE OF SERVICE

I hereby certify that on the 10th day of September, 1996, the original of the foregoing Initial Administrative Order was hand delivered to the Regional Hearing Clerk, U.S. Environmental Protection Agency, Region 6, First Interstate Bank Tower, 1445 Ross Avenue, Dallas, Texas 75202-2733, and that true and correct copies of the Initial Administrative Order, and the Rules Governing Issuance of and Administrative Hearings on Interim Status Corrective Action Orders were sent to the following by the method indicated below:

CERTIFIED MAIL - RETURN RECEIPT REQUESTED P 435 988 346

Richard D. Mico
Vice President and General Manager
Sparton Technology, Inc.
4901 Rockaway Blvd., SE
Rio Rancho, New Mexico 87124

CERTIFIED MAIL - RETURN RECEIPT REQUESTED P 435 988 347

C.T. Corporation System
Registered Agent for Sparton Technology, Inc.
119 East Marcy
Santa Fe, New Mexico 87501

Eric L. P...

ATTACHMENT I
CORRECTIVE ACTION PLAN

**SCOPE OF WORK
CORRECTIVE MEASURES IMPLEMENTATION
SPARTON TECHNOLOGY, INC.**

PURPOSE

The purpose of the Corrective Measures Implementation (CMI) Scope of Work (SOW) is to set forth the requirements for the design, construction, operation, maintenance, and monitoring of the Corrective Measures selected by EPA in the RCRA Final Decision and Response to Comments (FDRTC) dated June 24, 1996, for the Sparton Technology, Inc. facility located at 9621 Coors Road NW in Albuquerque, New Mexico (Facility). Respondent shall furnish all personnel, materials, and services necessary to implement the CMI program. EPA may require Respondent to conduct additional tasks beyond what is discussed in the following tasks in order to support the CMI program. Respondent shall furnish all personnel, materials, and services necessary to conduct the additional tasks.

PERFORMANCE STANDARDS

The Performance Standards for the CMI shall include remediation goals, cleanup levels, remedial objectives, and other substantive requirements, criteria, or limitations set forth in the FDRTC for the Facility or in this Order. The selected remedy, as described in the FDRTC, has four distinct components:

1. Continued operation of the existing on-site ground water extraction and treatment system, and continued monitoring of existing ground water monitoring wells;
2. Further characterization of the extent of contamination in the ground water and vadose zone;
3. Installation and operation of an on-site soil vapor extraction and treatment(SVE) system; and
4. Installation and operation of additional ground water extraction well(s) and a treatment and disposal system.

EPA will use the Performance Standards to determine if the Corrective Measures Implementation has been completed.

SCOPE

The Scope of Work (SOW) for each document is specified below. The SOWs are intended to be flexible documents capable of addressing both simple and complex site situations. If Respondent can justify to the satisfaction of EPA, that a plan and/or report or portion(s) thereof is not needed in the given site-specific situation, then EPA may waive that requirement.

The CMI program consists of the following tasks:

Task I: Operation of Existing On-Site Ground Water Extraction and Treatment System and Continued Monitoring of Existing Ground Water Monitoring Wells

Task II: Health and Safety Plan

Task III: Public Involvement Plan

Task IV: Soil Vapor Extraction Corrective Measure

- A. Vadose Zone Investigation Workplan**
- B. Soil Vapor Extraction Project**
 - 1. Vadose Zone Investigation Report**
 - 2. Design Plans and Specifications**
 - 3. Construction Workplan**
 - 4. Operation and Maintenance Plan**
 - 5. Health and Safety Plan**
 - 6. Commencement of Construction**
- C. Construction Completion Report**
- D. Corrective Measure Completion Report**

Task V: Ground Water Extraction Corrective Measure

- A. Ground Water Investigation Workplan**
- B. Ground Water Extraction and Treatment Project**
 - 1. Ground Water Investigation Report**
 - 2. Design Plans and Specifications**
 - 3. Construction Workplan**
 - 4. Operation and Maintenance Plan**
 - 5. Health and Safety Plan**
 - 6. Commencement of Construction**
- C. Construction Completion Report**
- D. Corrective Measure Assessment Reports**
- E. Corrective Measure Completion Report**

Task VI: Progress Reports

**TASK I - CONTINUED OPERATION OF THE EXISTING ON-SITE GROUND WATER
EXTRACTION AND TREATMENT SYSTEM AND CONTINUED MONITORING OF
EXISTING GROUND WATER MONITORING WELLS**

A. Operation of the Existing On-Site Ground Water Extraction and Treatment System

Effective upon the date of this Order, Respondent shall operate, and maintain continuous operation of the existing ground water recovery well network and treatment system at the Facility. This ground water recovery well network consists of the following recovery wells: PW-1, MW-18, MW-23, MW-24, MW-25, MW-26, MW-27, and MW-28. Respondent shall report the total monthly volume of recovered ground water from each recovery well in the Monthly Progress Reports.

At a minimum, Respondent shall conduct monthly sampling and analyses of the recovered ground water both prior to treatment, and following treatment, for the following constituents:

- Volatile organic constituents as listed in 40 C.F.R. Part 264, Appendix IX; and
- Hexavalent Chromium.

The efficiency of the treatment system as measured by the percent reduction of hazardous waste constituents will be monitored on a monthly basis. Treatment and disposal of recovered waters under this provision shall be performed in compliance with all Federal, State, or local laws, regulations, permits, or ordinances. Operation of the existing ground water recovery well network and treatment system shall be incorporated into, and modified as necessary to be consistent with, operation of the Ground Water Extraction Corrective Measure set forth in Task V.

B. Ground Water Monitoring Plan

Within twenty (20) days of the effective date of this Order, Respondent shall submit a Ground Water Monitoring Plan for the existing on-site and off-site ground water monitoring wells, capable of determining: 1) the concentration of the hazardous waste or hazardous waste constituents in the ground water; and 2) the ground water elevations. EPA will approve or modify the Ground Water Monitoring Plan. The Ground Water Monitoring Plan, as approved or modified by EPA, shall become the Final Ground Water Monitoring Plan for the existing on-site and off-site ground water monitoring wells.

Effective upon the 10th day of the first full month following EPA approval of the Ground Water Monitoring Plan, and every three months thereafter, Respondent shall conduct quarterly sampling and analyses of the existing on-site and off-site ground water monitoring wells. Respondent shall have the samples analyzed for the following constituents:

- Volatile organic constituents as listed in 40 C.F.R. Part 264, Appendix IX;
- Total metals as listed in 40 C.F.R. Part 264, Appendix IX; and
- Hexavalent Chromium.

The sample analyses results and ground water elevations shall be included in the Monthly Progress Reports (Task VI). Potentiometric surface maps and contaminant concentration contour maps shall be prepared for each of the flow zones in the aquifer (e.g., upper, upper lower, etc.) and included in the Monthly Progress Reports.

- C. Concurrent with the submission of the Operation and Maintenance Plan for the Ground Water Extraction Corrective Measure in Task V.B.4, Respondent shall submit a revised Ground Water Monitoring Plan for integration into the Operation and Monitoring Plan for the Ground Water Extraction Corrective Measure. EPA will approve or modify the revised Ground Water Monitoring Plan. The revised Ground Water Monitoring Plan, as approved or modified by EPA, shall become the Final Ground Water Monitoring Plan for the ground water monitoring well system.

TASK II: HEALTH AND SAFETY PLAN

Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Health and Safety Plan to EPA for all field activity associated with the Vadose Zone Investigation Workplan and the Ground Water Investigation Workplan. EPA does not approve or disapprove the Health and Safety Plan, but does review it to assure its existence. The Health and Safety Plan shall, at a minimum, include the following elements:

- A. Objectives: Describe the goals and objectives of the health and safety program (must apply to both on-site and off-site personnel and visitors). The Health and Safety Plan shall be consistent with the OSHA Regulations, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985), all state and local regulations, and other EPA guidance as provided.
- B. Hazard Assessment: List and describe the known hazardous substances that could be encountered by field personnel during construction and/or operation and maintenance activities. Respondent shall, at a minimum, discuss the following:
 - Inhalation Hazards
 - Dermal Exposure
 - Ingestion Hazards
 - Physical Hazards
 - Overall Hazard Rating

Respondent shall include a table that, at a minimum, lists: known hazardous substances, highest observed concentration, media, and symptoms/effects of acute exposure.

- C. Personal Protection/Monitoring Equipment
 - Describe personal protection levels and identify all monitoring equipment for each operational task.
 - Describe any action levels and corresponding response actions (i.e., when will levels of safety be upgraded).
 - Describe decontamination procedures and areas.
- D. Site Organization and Emergency Contacts

List and identify all contacts (include phone numbers). Identify the nearest hospital and provide a regional map showing the shortest route from the Facility to the hospital. Describe site emergency procedures and any site safety organizations. Include evacuation procedures for neighbors (where applicable). Include a Facility map showing emergency station locations (first aid, eye wash areas, etc.).

TASK III: PUBLIC INVOLVEMENT PLAN

Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Public Involvement Plan to EPA for review and approval. The purpose of the Public Involvement Plan is to disseminate information to the public regarding the investigation and remedial activities and results. A schedule for community relations activities shall be included in the Public Involvement Plan. EPA will approve or modify the Public Involvement Plan. The Public Involvement Plan, as approved or modified by EPA, shall become the Final Public Involvement Plan.

Respondent shall never appear to represent or speak for the EPA before the public, other government officials, or the media.

Public Involvement activities that may be required of Respondent include the following:

- A. Providing written and/or verbal notification to local residents or businesses prior to conducting field investigation or construction activities under this Order. Such notification shall include, but not be limited to, a description and estimated duration of the field investigation or construction activity, and contact person for the Respondent (including phone number).
- B. Conducting an open house or informal meeting (i.e., availability session) in a public location where people can talk to Agency officials and Respondent on a one-to-one basis;
- C. Preparing fact sheets summarizing current or proposed corrective action activities (all fact sheets shall be reviewed by the EPA prior to public distribution);
- D. Communicating effectively with people who have vested interest in the corrective action activities, (e.g., providing written or verbal information in the foreign language of a predominantly non-English-speaking community); and
- E. Maintaining an easily accessible repository of information on the facility-specific corrective action program, including this Order, approved workplans, and/or other reports at the Taylor Ranch Branch Library, 5700 Bogart Street, N.W., Albuquerque, New Mexico 87120. EPA may designate another repository as a replacement for the Taylor Ranch Branch library.

TASK IV: SOIL VAPOR EXTRACTION CORRECTIVE MEASURE

Task IV sets forth the plans and schedules for those activities to be undertaken by Respondent in order to develop the final plans, drawings; specifications, general provisions, and special requirements necessary to design, construct, operate, and monitor the performance of the Soil Vapor Extraction Corrective Measure selected in the FDRTC. Information on the design, construction, operation, and performance monitoring of the soil vapor extraction system can be found in the following EPA publications:

U.S. EPA. Guide for Conducting Treatability Studies under CERCLA: Soil Vapor Extraction; EPA/540/2-91/019A.

U.S. EPA. Soil Vapor Extraction Technology: Reference Handbook; EPA/540/2-91/003.

U.S. EPA. Evaluation of Soil Venting Application; Ground Water Issue; EPA/540/S-92/004.

U.S. EPA. Decision-Support Software for Soil Vapor Extraction Technology Application: HyperVentilate; EPA/600/R-93/028.

U.S. EPA. Innovative Site Remediation Technology: Vacuum Vapor Extraction, Volume 8; EPA/542/B-94/002.

U.S. EPA. Review of Mathematical Modeling for Evaluating Soil Vapor Extraction Systems; EPA/540/R-95/513.

A. Vadose Zone Investigation Workplan

Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Vadose Zone Investigation Workplan to EPA for review and approval. The objectives of the Vadose Zone Investigation Workplan are to define the location and extent of the lithologic units which may control the fate and transport of contaminants in the vadose zone, to define the nature and extent, both horizontally and vertically, of contamination in the vadose zone, and to collect the appropriate data required to design, construct, operate, and monitor the performance of the Soil Vapor Extraction Corrective Measure selected in the FDRTC. EPA will approve or modify the Vadose Zone Investigation Workplan. The Vadose Zone Investigation Workplan, as approved or modified by EPA, shall become the Final Vadose Zone Investigation Workplan. Respondent shall implement the Final Vadose Zone Investigation Workplan according to the schedule set forth in the Workplan. The Vadose Zone Investigation Workplan shall, at a minimum, include the following plans:

1. Project Management Plan

Respondent shall prepare a Project Management Plan which shall include a discussion of the technical approach, schedules, budget, and an outline of proposed activities necessary to complete the design of the soil vapor extraction system. The technical approach shall address all the requirements necessary to implement the requirements of this Task.

2. Data Collection Quality Assurance Plan

Respondent shall prepare a plan to document 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 shall, at a minimum, address the following:

a. Data Collection Strategy

The Data Collection Strategy shall, at a minimum, include 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 shall, at a minimum, discuss 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., soil, soil gas, 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 to be collected;
- (7) Documenting field sampling operations and procedures, including:
 - (a) Procedures and forms for recording the exact location and specific considerations associated with sample acquisition;
 - (b) Calibration of field devices;
 - (c) Collection of replicate samples;
 - (d) Construction materials and techniques associated with soil vapor monitoring probes/wells;
 - (e) Field equipment listing and sample containers; and
 - (f) Decontamination procedures.
- (8) Selecting appropriate sample containers; and
- (9) 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 shall, at a minimum, discuss 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., soil, soil gas, 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:
 - (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) Construction materials and techniques associated with soil vapor monitoring wells used to collect field data;
 - (e) Field equipment listing;
 - (f) Order in which field measurements were made; and
 - (g) Decontamination procedures.

d. Contaminated Material Disposal

All contaminated material generated by activities required in the CMI shall be disposed of in accordance with all Federal and State laws and regulations.

e. Sample Analysis

The Sample Analysis section shall, at a minimum, specify 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;
 - (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

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

conclusions of the investigation. The plan shall, at a minimum, address the following:

a. Data Record

The data record shall, at a minimum, include the following:

- (1) Unique sample or field measurement code;
- (2) Sampling or field measurement location and sample or 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 shall be 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, soil layer, topography); and
- (5) Summary data.

c. Graphical Displays

The following data shall be presented in graphical formats (e.g., bar graphs, line graphs, area or plan maps, isopleth plots, cross-sectional plots or 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 vadose zone contamination.

B. Soil Vapor Extraction Project

1. Vadose Zone Investigation Report

Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit a Vadose Zone Investigation Report to EPA for review and approval. EPA will approve or modify the Vadose Zone Investigation Report. The Vadose Zone Investigation Report, as approved or modified by EPA, shall become the Final Vadose Zone Investigation Report. This Report shall, at a minimum, include the following:

- a. The location and extent of lithologic units which may control the fate and transport of contaminants in the vadose zone. Based on field data and tests, a representative and accurate description of the subsurface stratigraphy in the vadose zone which is a part of the migration pathways at the Facility, including:
 - (1) Lithology, grain size, sorting;
 - (2) Zones of higher permeability or lower permeability that might direct and restrict the flow of contaminants; and
 - (3) Cross sections showing the extent (depth, thickness, lateral extent) of units which may be part of the migration pathways;
- b. A description of the nature and extent, both horizontally and vertically, of contamination in the vadose zone. The description shall include maps of the horizontal and vertical extent, including concentration profiles of the contaminants originating from the source area(s) at the Facility in both the soil matrix and soil gas; and
- c. The appropriate data for the design and implementation of a soil vapor extraction system. This shall include a field pilot test to provide data to determine design parameters and projected effectiveness of the full-scale soil vapor extraction system.

2. Design Plans and Specifications

Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit the Design Plans and Specifications for the Soil Vapor

Extraction Corrective Measure to EPA for review and approval. The design package shall consist of the detailed drawings and specifications needed to construct the corrective measure(s). EPA will approve or modify the design package. The design package, as approved or modified by EPA, shall become the Final Design Plans and Specifications. The Design Plans and Specifications shall, at a minimum, 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

Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit a Construction Workplan for the Soil Vapor Extraction Corrective Measure to EPA for review and approval. The purpose of the Construction Workplan is to document the overall management strategy, construction quality assurance procedures, and schedule for constructing the corrective measure. EPA will approve or modify the Construction Workplan. The Construction Workplan, as approved or modified by EPA, shall become the Final Construction Workplan. The Construction Workplan shall, at a minimum, include the following elements:

- a. Project Management: Describe the construction management approach including levels of authority and responsibility (include organization 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, Respondent shall prepare a Quality Assurance Project Plan (QAPjP) to document all monitoring procedures, sampling, field measurements, and sample analysis performed during these activities. Respondent shall use quality assurance, quality control, and chain-of-custody procedures 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 Workplan.
 - (2) The Construction Workplan shall specify 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

Respondent shall develop a cost estimate that includes both corrective measure construction and operation and maintenance costs. The purpose of the cost estimate is to assure that Respondent has the financial resources necessary to construct and implement the corrective measure(s).

h. Documentation Requirements

Respondent shall describe how 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
- (4) Laboratory or Field Test Results.

4. Operation and Maintenance Plan

Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit an Operation and Maintenance (O&M) Plan for the Soil Vapor Extraction Project to EPA for review and approval. The O&M Plan shall outline the procedures for performing operations, long term maintenance, and monitoring of the corrective measure. EPA will approve or modify the O&M Plan. The O&M Plan, as approved or modified by EPA, shall become the Final O&M Plan. The O&M plan shall, at a minimum, include the following elements:

- a. **Project Management:** Describe the management approach, including levels of authority and responsibility (include organization chart), during the operation and management phases of the remedy implementation.
- b. **System Description:** Describe the soil vapor extraction and treatment system and identify and describe significant equipment.
- 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.
- 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, Respondent shall prepare a Quality Assurance Project Plan (QAPjP) to document all monitoring procedures, sampling, field measurements, and sample analyses performed during these activities. Respondent shall use quality assurance, quality control, and chain-of-custody procedures 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).

h. Corrective Measure Monitoring: Describe the following:

- (1) monitoring objectives;**
- (2) the types of measurements to be made (e.g., vapor pressure, contaminant concentrations, 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 Completion Report.

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;**
- (3) The O&M Plan shall specify that in the event of a major breakdown and/or complete failure of the corrective measure (includes emergency situations), 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. 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 shall specify that Respondent collect and maintain the following information:

- (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 Completion Report.

5. **Health and Safety Plan**

Within two hundred and ten (210) days after receipt of EPA's approval or modification of the Vadose Zone Investigation Workplan, Respondent shall submit an updated Health and Safety Plan for the Soil Vapor Extraction Corrective Measure, as set forth in Task II, to EPA. EPA does not approve or disapprove the Health and Safety Plan, but does review it to assure its existence. The Health and Safety Plan shall be developed as a stand alone document.

6. **Commencement of Construction**

Upon receipt of written notification from the EPA, Respondent shall commence the construction process and implement the Construction Workplan in accordance with the schedule and provisions contained therein.

C. **Construction Completion Report - Soil Vapor Extraction Project**

Within ninety (90) days following completion of the construction of the Soil Vapor Extraction Corrective Measure, Respondent shall submit a Construction Completion Report to EPA for review and approval. The Construction Completion Report shall document how the completed project is consistent with the Final Design Plans and Specifications. EPA will approve or modify the Construction Completion Report. The Construction Completion Report, as approved or modified by EPA, shall become the Final Construction Completion Report. The Construction Completion Report shall, at a minimum, include 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 Completion Report

Respondent shall prepare and submit a Corrective Measure Completion Report to EPA for review and approval when the Performance Standards have been achieved for the Soil Vapor Extraction Corrective Measure. 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. EPA will approve or modify the Corrective Measure Completion Report. The Corrective Measure Completion Report, as approved or modified by EPA, shall become the Final Corrective Measure Completion Report. The Corrective Measure Completion Report shall, at a minimum, include the following elements:

1. Synopsis of the corrective measure;
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);
6. Summary of total operation and maintenance costs; and
7. 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 (e.g., incorporating an air sparging system with the soil vapor extraction system) in the aquifer where possible nonaqueous phase liquid (NAPL) contaminants remain relatively unaffected by ground water extraction.

TASK V: GROUND WATER EXTRACTION CORRECTIVE MEASURE

Task V sets forth the plans and schedules for those activities to be undertaken by Respondent in order to develop the final plans, drawings, specifications, general provisions, and special requirements necessary to design, construct, operate, and monitor the performance of the Ground Water Extraction Corrective Measure selected in the FDRTC. Respondent may draft the Design Plans and Specifications, the Construction Workplan, the Operation and Maintenance Plan, and the accompanying schedules so as to implement the Ground Water Extraction Corrective Measure in a phased approach, as outlined in the FDRTC. Information on the design, construction, operation, and performance monitoring of the ground water extraction system can be found in the following EPA publications:

U.S. EPA. Basics of Pump-and-Treat Ground Water Remediation Technology; EPA/600/8-90/003.

U.S. EPA. Methods for Evaluating the Attainment of Cleanup Standards, Volume 2: Ground Water; EPA/230/R-92/014.

U.S. EPA. Methods for Monitoring Pump-and-Treat Performance; EPA/600/R-94/123.

U.S. EPA. Ground-Water and Leachate Treatment Systems Manual; EPA/625/R-94/005.

A. Ground Water Investigation Workplan

Within forty-five (45) days of the effective date of this Order, Respondent shall submit a Ground Water Investigation Workplan to EPA for review and approval. The objectives of the Ground Water Investigation Workplan are to define the location and extent of the lithologic units which may control the fate and transport of contaminant in the aquifer, define the nature and extent, both horizontally and vertically, of contamination in the aquifer, and to collect the appropriate data required to design, construct, operate, and monitor the performance of the Ground Water Extraction Corrective Measure selected in the FDRTC. EPA will approve or modify the Ground Water Investigation Workplan. The Ground Water Investigation Workplan, as approved or modified by EPA, shall become the Final Ground Water Investigation Workplan. Respondent shall implement the Final Ground Water Investigation Workplan according to the schedule set forth in the Workplan. The Ground Water Investigation Workplan shall, at a minimum, include the following:

1. Project Management Plan

Respondent shall prepare a Project Management Plan which will include 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. The technical approach shall address all the requirements necessary to implement the requirements of this Task.

2. Data Collection Quality Assurance Plan

Respondent shall prepare a plan to document 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 shall, at a minimum, include the following:

a. Data Collection Strategy

The Data Collection Strategy shall, at a minimum, include 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 shall, at a minimum, discuss 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);
 - (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 shall, at a minimum, discuss 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:
 - (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 activities required in the CMI shall be disposed of in accordance with all Federal and State laws and regulations.

e. Sample Analysis

The Sample Analysis section shall, at a minimum, specify 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;
 - (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

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

a. Data Record

The data record shall, at a minimum, include the following:

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

Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit a Ground Water Investigation Report to EPA for review and approval. EPA will approve or modify the Ground Water Investigation Report. The Ground Water Investigation Report, as approved or modified by EPA, shall become the Final Ground Water Investigation Report. This Report shall, at a minimum, include 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
- 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

Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit the Design Plans and Specifications for the Ground Water Extraction Corrective Measure to EPA for review and approval. The design package shall consist of the detailed drawings and specifications needed to construct the corrective measure(s). EPA will approve or modify the design package. The design package, as approved or modified by EPA, shall become the Final Design Plans and Specifications. The Design Plans and Specifications shall, at a minimum, 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

Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit a Construction Workplan for the Ground Water Extraction Corrective Measure to EPA for review and approval. The purpose of the Construction Workplan is to document the overall management strategy, construction quality assurance procedures, and schedule for constructing the corrective measure. EPA will approve or modify the Construction Workplan. The Construction Workplan, as approved or modified by EPA, shall become the Final Construction Workplan. The Construction Workplan shall, at a minimum, include the following elements:

- a. **Project Management:** Describe the construction management approach including levels of authority and responsibility (include organization 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, Respondent shall prepare a Quality Assurance Project Plan (QAPjP) to document all monitoring procedures, sampling, field measurements, and sample analysis performed during these activities. Respondent shall use quality assurance, quality control, and chain-of-custody procedures 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 Workplan.
- (2) The Construction Workplan shall specify 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

Respondent shall develop a cost estimate that includes both corrective measure construction and operation and maintenance costs. The purpose of the cost estimate is to assure that Respondent has the financial resources necessary to construct and implement the corrective measure(s).

h. Documentation Requirements

Respondent shall describe how 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**
- (4) Laboratory or Field Test Results.**

4. Operation and Maintenance Plan

Within three hundred and thirty (330) days after receipt of EPA's approval or modification of the Ground Water Investigation Workplan, Respondent shall submit an Operation and Maintenance (O&M) Plan for the Ground Water Extraction Corrective Measure to EPA for review and approval. The O&M Plan shall outline the procedures for performing operations, long term maintenance, and monitoring of the corrective measure. EPA will approve or modify the O&M Plan. The O&M Plan, as approved or modified by EPA, shall become the Final O&M Plan. The O&M plan shall, at a minimum, include 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.
- 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, Respondent shall prepare a Quality Assurance Project Plan (QAPjP) to document all monitoring procedures, sampling, field measurements, and sample analyses performed during these activities. Respondent shall use quality assurance, quality control, and chain-of-custody procedures 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).
- 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;**
- (3) The O&M Plan shall specify that in the event of a major breakdown and/or complete failure of the corrective measure (includes emergency situations), 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. 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 shall specify that Respondent collect and maintain the following information:

- (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

Within three hundred and thirty (330) days after receipt of EPA's approval and/or modification of the Ground Water Investigation Workplan, Respondent shall submit an updated Health and Safety Plan for the Ground Water Extraction Corrective Measure, as set forth in Task II, to EPA. EPA does not approve or disapprove the Health and Safety Plan, but does review it to assure its existence. The Health and Safety Plan shall be developed as a stand alone document.

6. Commencement of Construction

Upon receipt of written notification from the EPA, Respondent shall commence the construction process and implement the Construction Workplan in accordance with the schedule and provisions contained therein.

C. Construction Completion Report

Within ninety (90) days following completion of the construction of the Ground Water Extraction Corrective Measure, and/or upon written notice from EPA regarding completion of the construction of one or more components in the Ground Water Extraction Corrective Measure (e.g., containment well system, treatment system, etc.), Respondent shall submit a Construction Completion Report to EPA for review and approval. The Construction Completion Report shall document how the completed project or component is consistent with the Final Design Plans and Specifications. EPA will approve or modify the Construction Completion Report. The Construction Completion Report, as approved or modified by EPA, shall become the Final Construction Completion Report for the project or component. The Construction Completion Report shall, at a minimum, include 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

Within sixty (60) days of receipt of written notification from EPA, Respondent shall submit a Corrective Measure Assessment Report to EPA for review and approval. The Corrective Measure Assessment Report shall thereafter be submitted to EPA for review and approval annually for a period of two (2) years, and every five years thereafter until this Order is terminated pursuant to Section XXVI of this Order. The Corrective Measure Assessment Report shall contain an evaluation of the past and projected future effectiveness of the corrective measure in attaining the remedial objectives of: (1) contaminant plume containment; and (2) restoration of the contaminated ground water to the media cleanup standards set forth in the FDRTC or in this Order. The evaluation shall follow EPA guidance in evaluating the performance of the ground water extraction system in meeting these two objectives. EPA will approve or modify the Corrective Measure Assessment Report. The Corrective Measure Assessment Report, as approved or modified by EPA, shall become the Final Corrective Measure Assessment Report for the time period covered by the Report. The Corrective Measure Assessment Report shall, at a minimum, include the following elements:

1. Synopsis of the corrective measure;
2. Describe the progress in attaining the remedial objectives of: (a) contaminant plume containment; and (b) restoration of the contaminated ground water.
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;
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.);

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; and
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.
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.

Respondent may at any time request that EPA select an alternative and/or supplemental corrective measure(s) (which may include requiring Respondent to achieve alternative clean up standards in lieu of the media cleanup standards set forth in the FDRTC or in this Order). Respondent 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

Respondent shall prepare and submit a Corrective Measure Completion Report to EPA for review and approval when the Performance Standards have been achieved for the Ground Water Extraction Corrective Measure. 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. EPA will approve or modify the revised Corrective Measure Completion Report. The revised Corrective Measure Completion Report, as approved or modified by EPA, shall become the Final Corrective Measure Completion Report. The Corrective Measure Completion Report shall, at a minimum, include the following elements:

1. Synopsis of the corrective measure;
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.

TASK VI: MONTHLY PROGRESS REPORTS

Respondent shall, at a minimum, provide EPA with signed monthly progress reports during the corrective measures design, construction, operation and maintenance. EPA may adjust the frequency of progress reporting to address site-specific needs. For example, more frequent progress reports may be needed to track critical activities such as corrective measure construction and start-up.

Progress reports shall, at a minimum, include the following elements:

- A. A description of significant activities (e.g., sampling events, inspections, etc.) and work completed/work accomplishments (e.g., performance levels achieved, hours of treatment operation, treated and/or excavated volumes, concentration of contaminants in treated and/or excavated volumes, nature and volume of wastes generated, etc.) during the reporting period;
- B. Summary of system effectiveness. Provide a comparison of system operation to predicted performance levels (applicable only during operation of the corrective measure);
- C. Summaries of all findings (including any inspection results);
- D. Summaries of all contacts with representatives of the local community, public interest groups or State government during the reporting period;
- E. Summaries of all problems or potential problems encountered during the reporting period;
- F. Actions being taken and/or planned to rectify problems;
- G. Projected work for the next reporting period; and
- H. The results of any sampling tests and/or other data generated during the reporting period.