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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region IX

In The Matter Of: The J.H. Baxter Superfund Site Weed, California J.H. Baxter & Co., International Paper, Roseburg Forest Products, Beazer East, Inc., Chicago Bridge & Iron, Inc., Aluminum Company of America (ALCOA) Respondents	U.S. EPA Docket No.91-21

Proceeding Under Section
106(a) of the
Comprehensive Environmental Response,
Compensation, and Liability Act of 1980,
as amended (42 U.S.C. § 9606(a))

ADMINISTRATIVE ORDER
FOR REMEDIAL DESIGN AND REMEDIAL ACTION

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ADMINISTRATIVE ORDER

FOR REMEDIAL DESIGN AND Remedial Action

I. INTRODUCTION AND JURISDICTION

This Administrative Order (the "Order") is issued by the United States Environmental Protection Agency ("EPA") under the authority vested in the President of the United States by Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C. § 9606(a). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580 (52 Fed. Reg. 2926, January 29, 1987), and was further delegated to EPA Regional Administrators on September 13, 1987 by EPA Delegation No. 14-14-B. This Order is issued to the above-captioned Respondents (the "Respondents") by EPA to perform the remedial design and remedial action as described in the Record of Decision for the J. H. Baxter Site ("the Baxter Site" or "the Site"), dated September 25, 1990.

II. FINDINGS OF FACT

A. Site Description

1. The Baxter Site includes the J. H. Baxter property, portions of the Roseburg Forest Products property, and the areal extent of contamination necessary for the implementation of the response action. The Site is located on the northeastern margin of the city of Weed, Siskiyou County, California. Weed is located in the southeastern margin of Shasta Valley, about 10 miles west-northwest of the peak of Mount Shasta, and approximately 40 miles south of the Oregon/California border.

2. The site is bordered on the west and northwest by

residential areas of Weed including Siskiyou Union High School, to the north by Angel Valley Subdivision and Lincoln Park, to the east by mixed woodlands, and to the south by irrigated pasture. Beaughton Creek runs through the eastern portion of the site and forms the northern boundary of the site. Land use in the site area consists of industrial activities carried out by J.H. Baxter, Roseburg Forest Products, and Morgan Wood Products. Land use adjacent to the site consists of pasture, mixed woodland, wildlife habitat, and residential development.

3. Regional physiographic features include Shasta Valley, Mount Shasta, Mount Shastina, and Black Butte. The site is underlain by coalescent fans of pyroclastic, mudflow, glacial, and fluvial deposits from the northwestern flank of Mount Shasta and Mount Shastina. The water table is shallow, 0-10 feet below ground surface, emergent in some areas of the site, and fluctuates with variable recharge conditions due to rainfall and snow melt. The Site receives most of its average 27 inches of precipitation during the winter as rain and snow.

4. The Baxter wood treatment plant and its numerous structures and surrounding grounds comprise approximately 33 acres. Roseburg Forest Products owns approximately 1000 acres adjacent to the J.H. Baxter property. Wood treatment operations on the J. H. Baxter property consist of a retort building with two pressurized wood treating vessels (retorts), a kiln for wood drying, a storage shed for treated lumber, an incisor building to prepare wood for treatment, a chemical mixing building, chemical storage tanks, a 500,000-gallon tank once used for creosote and currently used for process water storage, treated wood storage

areas, drip pads in front of the retorts, a poleyard, an office building, and abandoned wastewater impoundments.

5. Lumber operations on the Roseburg property include several sprinkler decks for irrigating logs, dry log-storage decks, sprinkler system recovery ponds, a lumber mill and veneer plant, processed wood storage yard, and a wood-fuel power plant. Notable features on Roseburg's property include an excavation and french drain system placed on site in 1983. The excavation exposed contaminated groundwater and the french drain system intercepts and redirects groundwater downgradient of the eastern half of the wood treatment property. Neither the french drain nor the excavation were constructed as part of any CERCLA response. Prior to the winter 1987-88, water collected by the french drain was discharged to Beaughton Creek. During the summer of 1988, Roseburg installed an activated carbon treatment plant to treat extracted groundwater. The treated water is either pumped into the log deck sprinkler system or discharged into Beaughton Creek. The National Pollutant Discharge Elimination System (NPDES) permit for the discharge expired May 31, 1989 and was not renewed. Roseburg is presently governed by Waste Discharge Requirements Order No. 90-214 and Cease and Desist Order No. 90-215 requiring the discharger to work towards the elimination of all discharges to Beaughton Creek.

6. Man-made and natural wetlands exist within site boundaries. Only man-made wetlands have been affected by contamination. These wetlands consist of irrigated pasture, Roseburg excavation pond, and wet areas created by discharges from the Roseburg power plant. The former Baxter spray field,

used for disposal of wastewater, also exhibits wetland characteristics. Of these wetlands, the Roseburg excavation pond and the Baxter spray field will be affected by the proposed remedy. The disposal options for treated groundwater present opportunities for increasing wetlands in the vicinity of the site through surface discharge options.

7. Wood treatment operations using chemicals to preserve lumber products were initiated at the site in 1937. Tanalith and Minalith are chemicals used in treatment processes until the mid-1950's. Tanalith is a mixture of sodium fluoride, sodium dichromate, arsenic, and dinitrophenol. Minalith is a mixture of diammonium phosphate, ammonium sulfate, sodium tetraborate, and boric acid. FCAP, a fluoride-chrome-arsenic-phenol mixture, is reported to also have been used. In the late 1960's, the use of chromated zinc chloride was removed from the on-site wood treatment process. Ammoniacal copper arsenate (ACA) was also used as a preservative.

8. Reports indicate that pentachlorophenol (PCP) was used for wood treatment from the 1950's until 1982. During the period of use, PCP was applied to wood in an oil-based mixture. Commercial grades of pentachlorophenol manufactured during this period contained various isomers of chlorinated dibenzo-dioxins and dibenzo-furans.

9. Additional chemicals used by J. H. Baxter Company from the beginning of its wood treatment operations in 1962 through the current operations of the treatment facility include ammoniacal copper-zinc-arsenate (ACZA), creosote, 50/50 (a 50:50 petroleum creosote mixture), D-blaze, and pyresote. Pyresote, a

flame retardant, is a mixture of zinc chloride, sodium dichromate, ammonium sulfate, and boric acid.

B. Regulatory and Enforcement History

1. Waste disposal, handling, and discharge practices over the 50 years of plant operations have resulted in site soil, groundwater, and surface water contamination by chemicals described in the paragraphs above. Waste generated at the site include retort drippings, tank and retort sludges, process water, wastewater, drying area drippings, storage area drippings, empty containers, and spilled raw preservative compounds. Prior to 1983, when the facility was ordered to cease its waste disposal practices by the North Coast Regional Water Quality Control Board (NCRWQCB), waste management involved on-site disposal and discharge, spray irrigation of waste water on site, storage in ponds and tanks on site, and possible disposal of sludges into a local landfill. Discharge of wastewater into the bermed area around the 500,000 gallon tank was also reported. Leakage from storage tanks may have also contributed to subsurface contamination.

2. By March 1983, elevated levels of arsenic, creosote, and pentachlorophenol were discovered by California Department of Health Services (DHS) and NCRWQCB in site soils, surface water runoff, and groundwater. Additional soil samples collected in Lincoln Park also showed elevated arsenic. Shortly thereafter, the NCRWQCB issued a Cleanup and Abatement Order to J. H. Baxter to cease waste disposal practices.

3. In October, 1984, EPA proposed the J. H. Baxter site for the National Priorities List (NPL).

4. In January, 1986 the site was formally included on California's Priority Ranking List. Also, at this time EPA, at the request of DHS, became the lead agency for CERCLA response.

5. DHS filed a complaint in San Mateo County Superior Court on February 27, 1986 against J.H. Baxter alleging numerous violations of the California Hazardous Waste Control Act including violations of storage, disposal and transportation of hazardous wastes. A Consent Judgment was entered in September 7, 1990, in which J.H. Baxter agreed to pay a total of $310,000 to DHS.

6. Formal NCRWQCB enforcement actions including issuance of Monitoring and Reporting Programs, Cleanup and Abatement Orders and Cease and Desist Orders commenced at this site in 1982 due to discharges of wood treatment chemicals occurring at the J.H. Baxter site. Existing NCRWQCB waste discharge requirements and cease and desist orders require J.H. Baxter and Roseburg Forest Products to address on-going operations and develop plans to correct discharges that violate their waste discharge requirements.

7. In September, 1986 negotiations with Respondents J.H. Baxter & Co., International Paper and Roseburg Forest Products to perform the Remedial Investigation and Feasibility Study (RI/FS) ended without settlement.

8. EPA funded and performed the RI in March, 1987 and released the RI report in January, 1989.

9. In June, 1989, pursuant to Section 105 of CERCLA (42 U.S.C. 9605), the Baxter Site was listed as final by EPA on the National Priorities List (NPL), set forth at 40 C.F.R. Part 300.

10. In April, 1990, EPA's Draft Feasibility Study and Proposed Plan were released.

11. EPA's decision for the remedial action to be implemented at the Site is embodied in a final Record of Decision (ROD), executed on September 25, 1990, with which the State had a reasonable opportunity to review and comment. The Record of Decision is attached to this Order as Appendix 1 and is incorporated by reference. The Record of Decision is supported by an Administrative Record that contains the documents and information upon which EPA based the selection of the response action.

12. Respondent J.H. Baxter currently owns and operates the woodtreating facility on the Site and Respondent Roseburg Forest Products currently owns property included in the Baxter Site. Prior to the purchase of the woodtreating facility and property by J.H. Baxter in approximately 1962, Respondent International Paper (IP) was the owner and operator. Prior to the purchase of the lumber operation and property by Respondent Roseburg Forest Products in approximately 1982, Respondent International Paper owned the property.

13. American Lumber & Treating Company (ALTC) conducted wood treating operations at the site from approximately 1937 to 1947. During this period ALTC disposed of hazardous substances or pollutants or contaminants at the Site. According to deposition testimony by former ALTC secretary H.H. Humphreys, Respondents ALCOA, and Chicago Bridge & Iron Company (CBI) then owned a majority of ALTC and participated in its operation.

14. In 1954 Koppers Company, Inc., acquired and liquidated

ALTC, and assumed all the liabilities of ALTC. As of June 30, 1988, BNS Acquisitions, Inc. (BNS Acquisitions), a Delaware corporation and an indirect wholly owned subsidiary of Beazer PLC, acquired indirectly more than ninety percent of the outstanding common stock of Koppers Company, Inc. On November 14, 1988, BNS Acquisitions acquired indirectly the balance of the common shares. On January 20, 1989, BNS Acquisitions merged into Koppers Company Inc., and on January 26, 1989, the name of Koppers Company, Inc., was changed to Beazer Materials and Services, Inc. On April 16, 1990, the name of Beazer Materials and Services, Inc., was changed to Beazer East, Inc., Respondent to this Order.

15. On February, 15, 1991 EPA issued special notice letters, pursuant to Section 122(e) of CERCLA, to Respondents J. H. Baxter & Company, International Paper, Roseburg Forest Products, ALCOA, CBI and Beazer East, Inc. providing them with the opportunity to perform or finance the remedial action selected in the ROD.

16. In response to Respondents Baxter, IP and Roseburg's "good faith" offer, EPA conducted negotiations with these parties for performance of the remedial action. NCRWQCB and DHS participated in the negotiations.

17. Respondents Beazer, CBI and ALCOA failed to make a "good faith" offer in response to EPA's special notice letters. However, in response to EPA's stated intention to take further enforcement action, these Respondents joined the negotiating parties in their proposal to perform the remedial action. These negotiations failed to result in settlement.

C. Site Contamination

1. The primary contaminants of concern (COCs) identified at the Site are arsenic, carcinogenic polycyclic aromatic hydrocarbons (PAHs), pentachlorophenol, and dioxins. All of these contaminants are known or suspected carcinogens and are present in each medium (surface, groundwater, sediment and soil) at concentrations exceeding health standards. Chromium, copper, zinc, benzene, and noncarcinogenic PAHs have been identified as contaminants at this Site. These latter contaminants are present at levels below health-based standards, are not widespread, or are considered to be less toxic than the primary site contaminants.

III. CONCLUSIONS OF LAW AND DETERMINATIONS

A. The Baxter Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

B. Each Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

C. Respondents are "liable parties" as owners and/or operators, currently or at the time of disposal, as defined in Section 107(a) of CERCLA, 42 U.S.C. § 9607(a), and are subject to this Order under Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).

D. The substances listed in Section II, Paragraph A are found at the Site and are "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

E. The past disposal and migration of hazardous substances from the Site constitutes a "release" as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

F. The potential for continued migration of hazardous

substances from the Site poses a threat of a "release" as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

G. The release and threat of release of one or more hazardous substances from the site may present an imminent and substantial endangerment to the public health or welfare or the environment.

H. The contamination and endangerment at this Site constitute an indivisible injury. The actions required by this Order are necessary to protect the public health, welfare, and the environment.

IV. NOTICE TO THE STATE

On August 5th, 1991, prior to issuing this Order, EPA notified the State of California, Department of Health Services Toxic Substances Control Program (formerly DHS, now known as Cal-EPA), NCRWQCB and the Department of Fish and Game of EPA's intent to issue this Order.

V. ORDER

Based on the foregoing, Respondents are hereby ordered to comply with the following provisions, including but not limited to all appendices to this Order, all documents incorporated by reference into this Order, and all schedules and deadlines in this Order, attached to this Order, submitted or prepared by Respondents and approved by EPA, or incorporated by reference into this Order:

VI. DEFINITIONS

Unless otherwise expressly provided herein, terms used in this Order which are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in the statute or its implementing regulations. Whenever terms

listed below are used in this Order or in the documents attached to this Order or incorporated by reference into this Order, the following definitions shall apply:

"Cal-EPA" shall mean the Department of Toxic Substances Control, a department of the California Environmental Protection Agency, formerly the California Department of Health Services, Toxic Substances Control Program (DHS).

"CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601 et seq.

"Clean-up Standard(s)" shall mean the levels of clean-up, and associated criteria, to be achieved in the contaminated soil, sediments and ground and surface water. These standards and associated criteria shall include those identified in the ROD and the SOW and those established by the applicable or relevant and appropriate requirements ("ARARs") identified in the ROD and in the SOW.

"Day" shall mean a calendar day unless expressly stated to be a working day. "Working day" shall mean a day other than a Saturday, Sunday, or federal holiday. In computing any period of time under this Order, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the end of the next working day.

"DFG" shall mean the California Department of Fish and Game.

"EPA" shall mean the United States Environmental Protection Agency.

"NCRWQCB" shall mean the North Coast Regional Water Quality Control Board.

"National Contingency Plan" or "NCP" shall mean the National Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, including any amendments thereto.

"Operation and Maintenance" or "O&M" shall mean all activities required under the Operation and Maintenance Plan developed by Respondents pursuant to this Order and Section IX, (Work To Be Performed) and approved by EPA.

"Oversight" shall mean the United States' and/or its contractors' inspection of response actions and all other actions taken to verify the adequacy of all activities undertaken and reports submitted by Respondents as required under the terms of this Order.

"Performance Standards" shall mean those cleanup standards, standards of control, and other substantive requirements, criteria or limitations, identified in the Record of Decision, Section IX (Work To Be Performed) and the SOW, that the Remedial Action and Work required by this Order must attain and maintain.

"Record of Decision" or "ROD" shall mean the EPA Record of Decision relating to the Site, signed by the Regional Administrator on September 27, 1990, all attachments and any amendments thereto. (Attached as Appendix 1 to this Order)

"Remedial Action" or "RA" shall mean those response activities to be undertaken by Respondents to implement the remedy selected in the ROD and set forth in the Scope of Work (SOW) attached as Appendix 2 to this Order, including any additional activities required under Sections IX, X, XI, XII, and XXI of this Order.

"Remedial Design" or "RD" shall mean those response activities to be undertaken by Respondents to develop any final plans and specifications for the Remedial Action pursuant to the SOW and this Order.

"Response Costs" shall mean all costs including, administrative enforcement, removal, investigative and remedial or other direct and indirect costs and accrued interest thereon, incurred by the United States pursuant to CERCLA. Response costs include but are not limited to oversight costs, which are the costs of overseeing the Work, such as the costs of reviewing or developing plans, reports and other items pursuant to this Order and costs associated with verifying the Work.

"Section" shall mean a portion of this Order identified by a roman numeral and includes one or more paragraphs.

"SOW" shall mean the Scope of Work for implementation of the Remedial Action and Operation and Maintenance at the Site, as set forth in Appendix 2 to this Order and any modifications made under this Order.

"Site" or "the J.H. Baxter Superfund Site" shall mean the J.H. Baxter property located at 422 Mill Street, portions of the Roseburg Forest Products property, located at 98 Mill Street, Weed, California, and the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for the implementation of the response action.

"State" shall mean the North Coast Regional Water Quality Control Board (NCRWQCB), the Department of Toxic Substances Control (Cal-EPA), and the California Department of Fish and Game (DFG).

"United States" shall mean the United States of America.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any "pollutant" or "contaminant" under Section 101(33); or (3) any "hazardous waste" under Section 1004(5) of RCRA, 42 U.S.C. § 6903(5), and any "solid waste" under Section 1004(27) of RCRA, 42 U.S.C. § 6903(27).

"Work" shall mean all response activities Respondents are required to perform under this Order, including any Remedial Design, Remedial Action, Operation and Maintenance, and any activities required to be undertaken pursuant to the SOW, Sections IX (Work To Be Performed) through XVIII (Assurance of Ability To Complete Work).

"Work Plan" shall mean the work plan developed by the Respondents and approved by EPA which details the work to be conducted pursuant to this Order.

VII. NOTICE OF INTENT TO COMPLY

Respondents shall provide, not later than 7 days after the effective date of this Order, written notice to EPA's Remedial Project Manager (RPM) stating each Respondent's intent to comply with the terms of this Order. If Respondents do not unequivocally commit to perform the remedial action as provided by this Order, each so refusing shall be deemed to have violated this Order and to have failed or refused to comply with this Order. Respondents' written notice shall describe, using facts that exist on or prior to the effective date of this Order, any "sufficient cause" defenses asserted by Respondents, or any one of them, under Sections 106(b) and 107(c)(3) of CERCLA, 42 U.S.C.

§§ 9606(b), 9607(c)(3). The absence of a response by EPA to the notice required by this paragraph shall not be deemed to be acceptance of Respondents' assertions.

VIII. PARTIES BOUND

A. This Order shall apply to and be binding upon the Respondents identified in Section II.B.10, 11 and 12 their directors, officers, employees, agents, successors, and assigns. Respondents are jointly and severally responsible for carrying out all activities required by this Order. No change in the ownership, corporate status, or other control of Respondents shall alter any of the Respondent's responsibilities under this Order.

B. Respondents shall provide a copy of this Order to any prospective successors before a controlling interest in Respondents' assets, property rights, or stock are transferred to the prospective successor. Respondents shall provide a copy of this Order to each contractor, sub-contractor, laboratory, or consultant retained to perform any Work under this Order, within five days after the effective date of this Order or on the date such services are retained, whichever date occurs later. Respondents shall also provide a copy of this Order to each person representing them, or any one of them, with respect to the Site or the Work and shall condition all contracts and subcontracts entered into hereunder upon performance of the Work in conformity with the terms of this Order. With regard to the activities undertaken pursuant to this Order, each contractor and subcontractor shall be deemed to be related by contract to the Respondents within the meaning of Section 107(b)(3) of CERCLA, 42

U.S.C. § 9607(b)(3). Notwithstanding the terms of any contract, each Respondent is responsible for compliance with this Order and for ensuring that its contractors, subcontractors and agents comply with this Order, and perform any Work in accordance with this Order.

C. Within ten (10) days after the effective date of this Order, Respondents shall record a copy of this Order in the appropriate governmental office where land ownership and transfer records are filed or recorded. Respondents shall, within 15 days after the effective date of this Order, send notice of such recording to EPA.

IX. WORK TO BE PERFORMED

A. General Obligations

1. Respondents shall cooperate with EPA and the State in providing information regarding the Work to the public. As requested by EPA, Respondents shall participate in the preparation of such information for distribution to the public and in public meetings which may be held or sponsored by EPA to explain activities at or relating to the Site.

2. Notwithstanding any approvals which may be granted by the United States or other governmental entities, Respondents shall assume any and all liability arising from or relating to their contractors, subcontractors, or any other person acting on their behalf in the performance of the remedial action components or their failure to perform fully or complete the remedial action components.

3. Respondents shall appoint a representative ("Project Coordinator") to act on their behalf to execute the remedial

action components. Within 7 days after the effective date of this Order, Respondents shall notify EPA in writing of the name and qualifications of the Project Coordinator, including the support entities and staff, proposed to be used in carrying out Work under this Order. If at any time Respondents propose to use a different Project Coordinator, Respondents shall notify EPA in advance and shall obtain approval from EPA before the new Project Coordinator performs any Work under this Order.

4. EPA will review Respondents' selection of a Project Coordinator according to the terms of this paragraph. If EPA disapproves of the selection of the Project Coordinator, Respondents shall submit to EPA within 30 days after receipt of EPA's disapproval of the Project Coordinator previously selected, a list of Project Coordinators, including primary support entities and staff, that would be acceptable to Respondents. EPA will thereafter provide notice to Respondents of the names of the Project Coordinators that are acceptable to EPA. Respondents may then select any approved Project Coordinator from that list and shall notify EPA of the name of the Project Coordinator selected within twenty-one (21) days of EPA's designation of approved Project Coordinators.

5. While Respondents may collect, stage, and secure materials on-site, they shall not, in performance of response activities under this Order, treat and redispose of material upon the Site without the presence and/or approval of EPA or EPA's designated oversight personnel.

6. Respondents shall dispose of any materials taken offsite in compliance with the EPA's Revised Procedures for

Implementing Off-Site Response Actions ("Off-site Policy" EPA OSWER Directive 9834.11, November 13, 1987) and any amendments thereto, and the California Code of Regulations (CCR), Title 22, Chapter 30, Article 6.5, Requirements for Transporters of Hazardous Waste.

7. Respondents shall submit all reports (daily, weekly, monthly, etc.) prepared by their contractors and subcontractors to EPA's designated oversight personnel, and to the State according to the notice provisions and schedules set forth in the SOW.

8. Respondents shall sample and monitor soils, sediment, air, leachate, surface water and groundwater as specified in Section V.C of the SOW.

B. IDENTIFICATION OF AND OBLIGATIONS REGARDING DOCUMENTS TO BE SUBMITTED TO EPA "DELIVERABLES"

1. Remedial Design Plan: Within 30 days of the effective date of this Order, Respondents shall submit a work plan to EPA and the State for the design of the Remedial Action at the Site ("Remedial Design Work Plan"). The Remedial Design Work Plan shall provide for design of the remedy set forth in the ROD in accordance with the SOW and, upon its approval by EPA, shall be incorporated into and become enforceable under this Order. In accordance with the attached Scope of Work, the Respondents shall submit to EPA and the State a Health and Safety Plan for field design activities which conforms to the applicable Occupational Safety and Health Administration and EPA requirements including, but not limited to, 29 C.F.R. § 1910.120.

a. The Remedial Design Work Plan shall include plans and schedules for implementation of all remedial design and pre-design tasks identified in the SOW, including, but not limited to, plans and schedules for the completion of: Any additional field or pilot testing work necessary to complete each component of the Remedial Action; Sampling and Analysis Plans; QAPPs, Health & Safety Plan; Treatability Studies; Preliminary Design Submittals; Intermediate Design Submittals; Pre-final/final Design Submittals; Construction Quality Assurance Project Plan. In addition, the Remedial Design Work Plan shall include a schedule for completion of the Remedial Action Work Plan.

b. Upon approval by EPA of the Remedial Design Work Plan, Respondents shall implement the Remedial Design Work Plan. The Respondents shall submit all plans, submittals and other deliverables required under the approved Remedial Design Work Plan in accordance with the approved schedule for review and approval pursuant to the SOW. Unless otherwise directed by EPA, Respondents shall not commence further Remedial Design Activities at the Site prior to approval of the Remedial Design Work Plan.

c. The preliminary design submittal shall include, at a minimum, the following: (1) design criteria to achieve the Performance Standards; (2) results of treatability studies; (3) results of additional field sampling; (4) project delivery strategy; (5) preliminary plans, drawings and sketches; (6) required specifications in outline form; and (7) preliminary construction schedule.

d. The pre-final/final design submittal shall include, at a minimum, the following: (1) final plans and specifications;

(2) Operation and Maintenance Plan; (3) Construction Quality Assurance Project Plan (CQAPP); (4) Field Sampling Plan (directed at measuring progress towards meeting Performance Standards); and (5) Contingency Plan. The CQAPP, which shall detail the approach to quality assurance during construction activities at the site, shall specify a quality assurance official ("QA Official"), independent of the Supervising Contractor, to conduct a quality assurance program during the construction phase of the project.

2. Remedial Action Work Plan

a. Concurrently with the submittal of the final design, Respondents shall submit to EPA and the State, a work plan for the performance of the Remedial Action at the Site ("Remedial Action Work Plan"). The Remedial Action Work Plan shall provide for construction of the components of the Remedial Action, in accordance with SOW, as set forth in the design plans and specifications in the approved final design submittal. Upon its approval by EPA, the Remedial Action Work Plan shall be incorporated into and become enforceable under this Order.

b. The Remedial Action Work Plan shall contain all items specified in the attached SOW, including the following: (1) the schedule for completion of the Remedial Action; (2) method for selection of the contractor; (3) schedule for developing and submitting other required Remedial Action Plans; (4) methods for implementation of the Construction Quality Assurance Plan; (5) a Site plan which addresses all media; (6) methods for satisfying ARARs and permitting requirements; (7) methods for implementation of the Operation and Maintenance Plan; (8) methods for implementation of the Contingency Plan; (9)

tentative formulation of the Remedial Action Team; (10) construction quality control plan (by the constructor); and (11) procedures and plans for the decontamination of equipment and the disposal of contaminated materials, and (12) a description of the monitoring plan to be implemented to demonstrate compliance with ROD standards through confirmation sampling. The Remedial Action Work Plan shall include a schedule for implementation of all Remedial Action tasks identified in the final design submittal and shall identify the initial formulation of the Settling Defendants' Remedial Action Project Team (including, but not limited to, the Supervising Contractor).

c. Upon approval by EPA of the Remedial Action Work Plan, Respondents shall implement the activities required under the Remedial Action Work Plan. The Respondents shall submit all plans, submittals, or other deliverables required under the approved Remedial Action Work Plan in accordance with the approved schedule for review and approval pursuant to the SOW. Unless otherwise "approved" directed by EPA, Respondents shall not commence physical on-site activities at the Site prior to approval of the Remedial Action Work Plan.

3. <u>Monthly Progress Reports</u>: The Respondents shall provide monthly written progress reports to EPA and the State. These progress reports shall be submitted by the 10th of each month for work done the preceding month and planned for the current month, including sampling events. The first monthly report pursuant to this Order will be due by the tenth of the calendar month immediately following the effective date of this Order. The progress reports shall include, but not be limited to

the information as described in Section VI.A of the SOW.

4. Annual Monitoring Report: The Respondents shall submit an Annual Report to EPA and the State within thirty (30) days of completing the final monthly sampling events of each calendar year until the Work is completed. The Annual Report shall summarize the groundwater, soils, sediment, air, leachate and surface water monitoring data and treatment system operational data, as appropriate, for the previous year. This Annual Report shall contain, but not be limited to a summary of the information collected over the previous year, as described in Section VI.A of the SOW.

5. Confirmation Sampling Plan: Respondents shall submit to EPA and the State a Confirmation Sampling Plan that describes the sampling program to be completed to verify that Clean-up Standards have been achieved.

6. Respondents shall submit to EPA and the State a draft and a final copy of each of the deliverables as described above (except the monthly report, the Annual Reports, and the Quality Assurance Report) pursuant to the schedule described and attached to the SOW. Any failure of the Respondents to submit a deliverable in compliance with the schedule will be deemed a violation of this Order.

7. After review of any deliverable, plan, report, or other item which is required to be submitted for review and approval pursuant to this Order, EPA may: (a) approve the submission; (b) approve the submission with modifications; (c) disapprove the submission and direct Respondents to re-submit the document after incorporating EPA's comments; or (d) disapprove the submission

and assume responsibility for performing all or any part of the response action. As used in this Order, the terms "approval by EPA", "EPA approval" or a similar term mean the action described in subparagraphs (a) or (b) of this paragraph.

8. In the event of approval or approval with modifications by EPA, Respondents shall proceed to take any action required by the deliverable, plan, report, or other item, as approved or modified by EPA.

9. Upon receipt of the notice of disapproval or a request for modification, Respondents shall, within fourteen (14) days, correct the deficiencies and resubmit the deliverable, plan, report or other item for approval. Notwithstanding the notice of disapproval, Respondents shall proceed, at the direction of EPA, to take any action required by any non-deficient portion of the submission.

10. If any submission is not approved by EPA, Respondents shall be deemed to be in violation of this Order.

11. The Work performed by the Respondents pursuant to this Order shall, at a minimum, achieve the Performance Standards.

C. ADDITIONAL OBLIGATIONS: Work To Be Performed

1. Neither the Work Plan nor any approvals, permits or other permissions which may be granted by EPA related to this Order constitute a warranty or representation of any kind by the United States that the Work Plan will achieve the standards set forth in the ROD, and in the SOW, and shall not foreclose the United States from seeking performance of all terms and conditions of this Order.

Nothing in this Order shall be construed to relieve

Respondents of their obligations to achieve all Clean-up Standards and Performance Standards set forth in the ROD and in the SOW. Following termination of this Order, if post-termination monitoring indicates that the groundwater Clean-up Standards are being exceeded, Respondents shall recommence treatment of the groundwater until Clean-up Standards have been achieved.

2. Respondents shall meet all Clean-up Standards and Performance Standards identified in the ROD and the SOW, including, but not limited to those set forth in Section III of the SOW.

3. In the event EPA determines that the Respondents have failed to implement the Remedial Action or any portions thereof in a timely or adequate manner, the EPA or its designee may perform such portions of the Remedial Action as EPA determines may be necessary. If EPA performs all or portions of the Remedial Action because of the Respondents' failure to comply with their obligations under this Order, the Respondents shall be liable to EPA for the costs of doing such work pursuant to Section 107(a) of CERCLA, plus civil penalties as set forth in Section XX.E of this Order.

4. All documents made pursuant to this Order and submitted to EPA for approval and the State for review shall be sent by overnight mail or an equivalent delivery service.

5. Within thirty (30) days after Respondents conclude that the Remedial Action has been fully performed, Respondents shall so notify EPA and the State and shall schedule and conduct a pre-certification inspection to be attended by Respondents, EPA

and the State. Within thirty (30) days of the pre-certification inspection Respondents shall submit a Remedial Action Completion Report. If, after completion of the pre-certification inspection and receipt and review of the Remedial Action Completion Report, EPA determines that the Remedial Action or any portion thereof has not been completed in accordance with this Order, EPA shall notify Respondents in writing of the activities to be undertaken to complete the Remedial Action, and shall set forth in the notice a schedule for performance of such activities. Respondents shall perform all activities described in the notice in accordance with the specifications and schedules established therein. If EPA concludes, following the initial or any subsequent certification of completion by Respondents that the Remedial Action has been fully performed in accordance with this Order, EPA may notify Respondents that the Remedial Action has been fully performed. EPA's notification shall be based on present knowledge and Respondents' certification to EPA, and shall not limit EPA's right to perform periodic reviews pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any action that in the judgment of EPA is appropriate at the Site, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607.

6. Within thirty (30) days after Respondents conclude that all phases of the Work have been fully performed, that the Performance Standards have been attained, and that all Operation and Maintenance activities have been completed, Respondents shall submit to EPA and the State a Work Completion Report certifying that the Work has been completed in full satisfaction of the requirements of this Order. EPA shall require such additional

activities as may be necessary to complete the Work or EPA may, based upon present knowledge and Respondents' certification to EPA, issue written notification to Respondents that the Work has been completed, as appropriate, in accordance with procedures determined by EPA for Respondents' certification of completion of the Remedial Action. EPA's notification shall not limit EPA's right to perform periodic reviews pursuant to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or require any action that in the judgment of EPA is appropriate at the Site or study area, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607.

X. ADDITIONAL WORK

A. In the event that EPA or the Respondents determine that additional response work is necessary to protect human health and the environment, to carry out the remedy described in the ROD or to meet the Performance or Clean-up Standards described in the ROD, the SOW, or in Section IX (Work To Be Performed) of this Order, Respondents shall implement such additional work. Notification of any additional work will be provided to the Project Coordinator.

B. Unless otherwise stated by EPA, within 30 days of receipt of notice by EPA that additional work is necessary pursuant to this Section, the Respondents shall submit a work plan as specified by EPA. The plan shall conform to the requirements in Section IX (Work To Be Performed).

C. Any additional work determined to be necessary by Respondents is subject to approval by EPA.

D. Any additional work determined to be necessary by Respondents and approved by EPA, or determined to be necessary by

EPA to protect human health and the environment, to carry out the remedy described in the ROD or to meet the Performance or Clean-up Standards, shall be completed by Respondents in accordance with the standards, specifications, and schedules approved by EPA.

E. If EPA disapproves the plan pursuant to the provisions of Section IX (Work To Be Performed), within 14 days of such disapproval, Respondents, consistent with Section IX (Work to Be Performed), shall submit a modified plan.

F. Respondents shall promptly implement the plan as approved or modified by EPA.

XI. EPA PERIODIC REVIEW

Under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any applicable regulations, EPA may review conditions at the Site to assure that the Work performed pursuant to this Order adequately protects human health and the environment. Until such time as EPA certifies completion of the Work, Respondents shall conduct the requisite studies, investigations, or other response actions as determined necessary by EPA in order to permit EPA to conduct the review under Section 121(c) of CERCLA. As a result of any review performed under this paragraph, Respondents may be required to perform additional Work or to modify Work previously performed.

XII. ENDANGERMENT AND EMERGENCY RESPONSE

A. In the event of any action or occurrence during the performance of the Work which causes or threatens to cause a release of a hazardous substance or which may present an immediate threat to public health or welfare or the environment,

Respondents shall immediately take all appropriate action to prevent, abate, or minimize the threat, and shall immediately notify the State and EPA Remedial Project Managers. If EPA's RPM is not available, Respondents shall notify the EPA Emergency Response Section, Region 9. Respondents shall take such action in consultation with EPA's RPM (or the EPA Emergency Response Section, Region 9, if the RPM is not available) and in accordance with all applicable provisions of this Order, including but not limited to the Health and Safety Plan and the Contingency Plan. In the event that Respondents fail to take appropriate response action as required by this Section, and EPA takes that action instead, Respondents shall be liable to EPA for all costs of the response action pursuant to Section 107 of CERCLA.

B. Nothing in the preceding paragraph shall be deemed to limit any authority of the United States or the State to take, direct, or order all appropriate action to protect human health and the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances on, at, or from the Site.

XIII. COMPLIANCE WITH APPLICABLE LAWS

A. Except as provided in Section 121(e) of CERCLA and the NCP, no permit shall be required for any portion of the Work conducted entirely on-Site; however, Respondents shall meet all substantive requirements of ARARs as set forth in the ROD. Where any portion of the Work requires a Federal or state permit or approval, Respondents shall submit timely applications and take all other actions necessary to obtain and to comply with all such permits or approvals.

B. All activities conducted by Respondents pursuant to this Order shall be performed in accordance with the requirements of all Federal and state laws and regulations. EPA has determined that the activities contemplated by this Order are consistent with the National Contingency Plan (NCP).

C. This Order is not, and shall not be construed to be, a permit issued pursuant to any Federal or state statute or regulation.

XIV. EPA REMEDIAL PROJECT MANAGER; STATE PROJECT MANAGERS

A. All communications, whether written or oral, from Respondents to EPA shall be directed to EPA's Remedial Project Manager (RPM). Respondents shall submit to EPA three copies, and to NCRWQCB, Cal-EPA and DFG each one copy, of all deliverables, documents, including plans, reports, and other correspondence, which are developed pursuant to this Order, and shall send these documents by overnight mail.

EPA's Remedial Project Manager is:

Mary Masters
EPA, Region IX
75 Hawthorne St H-7-2
San Francisco, CA 94105

B. EPA has the unreviewable right to change its Remedial Project Manager. If EPA changes its Remedial Project Manager, EPA will inform Respondents in writing of the name, address, and telephone number of the new Remedial Project Manager.

C. EPA's RPM shall have the authority lawfully vested in a Remedial Project Manager (RPM) and On-Scene Coordinator (OSC) by the National Contingency Plan, 40 C.F.R. Part 300. EPA's RPM shall have authority, consistent with the National Contingency

Plan, to halt any work required by this Order, and to take any necessary response action.

D. All communications, whether written or oral, from Respondents to the State shall be directed to State project managers as follows:

As to the NCRWQCB:

Joan Fleck
Project Coordinator
Regional Water Quality Control Board
North Coast Region
1440 Guerneville Road
Santa Rosa, CA 95403
(707) 576-2220

As to Cal-EPA:

Ed Cargile
Department of Toxic Substances Control
10151 Croydon Way, Suite 3
Sacramento, CA 95827
(916) 855-7858

As to DFG:

Harry Rectenwald
California Fish & Game
601 Locust Street
Redding, CA 96001

XV. SITE ACCESS AND DATA/DOCUMENT AVAILABILITY

A. To the extent that the Site or other areas where work is to be performed under this Order is presently owned or controlled by parties other than those bound by this Order and to the extent that access to or easements over property is required for the proper and complete performance of this Order, Respondents shall cooperate and work in conjunction with the present owners or those persons who have control over the property, including lessees, to obtain access agreements within sixty (60) days of the effective date of this Order. Site access agreements shall

provide access to EPA, its contractors and representatives, and to Respondents and their contractor(s) and authorized representatives, and such agreements shall specify that Respondents are not EPA's representatives with respect to liability associated with Site activities.

B. Respondents shall save and hold harmless the United States and its officials, agents, employees, contractors, sub-contractors, or representatives for or from any and all claims or causes of action or other costs incurred by the United States including but not limited to attorneys fees and other expenses of litigation and settlement arising from or on account of acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors, and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Order.

C. In the event that site access agreements are not obtained within the sixty (60) day period, Respondents shall notify EPA within sixty five (65) days of the effective date of this Order regarding both the lack of, and efforts to obtain, such agreements. If Respondents fail to gain access within 60 days, they shall continue to use best efforts to obtain access until access is granted. For purposes of this paragraph, "best efforts" includes but is not limited to, seeking judicial assistance and the payment of money as consideration for access.

D. Respondents or any of their agents or representatives shall allow EPA and its authorized representatives and contractors, the State and its authorized representatives and contractors, to enter and freely move about all property at the

Site and off-Site areas subject to or affected by the work under this Order or where documents required to be prepared or maintained by this Order are located, for the purposes of inspecting conditions, activities, the results of activities, records, operating logs, and contracts related to the Site or Respondents and their representatives or contractors pursuant to this Order; reviewing the progress of the Respondents in carrying out the terms of this Order; conducting tests as EPA or its authorized representatives or contractors deem necessary; using a camera, sound recording device or other documentary type equipment; and verifying the data submitted to EPA by Respondents. Respondents shall allow EPA and its authorized representatives to enter the Site, to inspect and copy all records, files, photographs, documents, sampling and monitoring data, and other writings related to work undertaken in carrying out this Order. Nothing herein shall be interpreted as limiting or affecting EPA's right of entry or inspection authority under Federal law.

E. Respondents may assert a claim of business confidentiality covering part or all of the information submitted to EPA pursuant to the terms of this Order under 40 C.F.R. § 2.203, provided such claim is not inconsistent with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7) or other provisions of law. This claim shall be asserted in the manner described by 40 C.F.R. § 2.203(b) and substantiated by Respondents at the time the claim is made. Information determined to be confidential by EPA will be given the protection specified in 40 C.F.R. Part 2. If no such claim accompanies the information when it is submitted

to EPA, it may be made available to the public by EPA or the state without further notice to the Respondents. Respondents shall not assert confidentiality claims with respect to any data related to Site conditions, sampling, or monitoring.

F. Respondents shall maintain for the period during which this Order is in effect, an index of any materials, records or documents relating to activities at the Site or to the implementation of this Order, that Respondents claim contain confidential business information. The index shall contain, for each item, the date, author, addressee, and subject of the item. Upon written request from EPA, Respondents shall submit a copy of the index to EPA.

G. Any person obtaining access to the Site pursuant to this provision shall comply with all applicable provisions of the Worker Health and Safety Plan as submitted pursuant to the SOW.

H. Notwithstanding any provision of this Order, the United States retains all of its access authorities and rights under CERCLA, RCRA and any other applicable federal statute or authority.

I. Respondents shall provide to EPA upon request, copies of all documents and information within their possession and/or control or that of its contractors or agents relating to activities at the Site or to the implementation of this Order, including but not limited to sampling, analysis, chain-of-custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, or other documents or information related to the Work. Respondents shall also make available to EPA for purposes of investigation, information

gathering, or testimony, its employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

XVI. RECORD PRESERVATION

A. For a period of ten (10) years following EPA provides notice to Respondents that the Work has been completed, Respondents shall preserve and retain all records and documents in their possession or control, including the documents in the possession or control of their contractors and agents on and after the effective date of this Order that relate in any manner to the Site. At the conclusion of this document retention period, Respondents shall notify the United States at least ninety (90) calendar days prior to the destruction of any such records or documents, and upon request by the United States, Respondents shall deliver any such records or documents to EPA.

B. Within 10 days after the effective date of this Order, each Respondent shall submit to EPA a certification, signed by an appropriate responsible corporate official, that states that to the best of the official's knowledge and belief, after a thorough investigation of that Respondent's officers, directors, employees, agents, contractors, subcontractors or any person familiar with the information described in the certification, that it has not altered, mutilated, discarded, destroyed or otherwise disposed of any records, documents or other information relating to its potential liability with regard to the Site since notification of potential liability by the United States or the State or the filing of suit against it regarding the Site and that it has fully complied with any and all EPA requests for

information pursuant Section 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e), 9622(e). Respondents shall not dispose of any such documents without prior approval by EPA. Respondents shall, upon EPA's request and at no cost to EPA, deliver the documents or copies of the documents to EPA.

XVII. DELAY IN PERFORMANCE

A. Any delay in performance of this Order that, in EPA's judgment, is not properly justified by Respondents under the terms of this Section shall be considered a violation of this Order. Any delay in performance of this Order shall not affect Respondents' obligations to fully perform all obligations under the terms and conditions of this Order.

B. Respondents shall notify EPA and the State of any delay or anticipated delay in performing any requirement of this Order. Such notification shall be made by telephone to EPA's RPM within forty eight (48) hours after Respondents first knew or should have known that a delay might occur. Respondents shall adopt all reasonable measures to avoid or minimize any such delay. Within five (5) business days after notifying EPA by telephone, Respondents shall provide written notification fully describing the nature of the delay, any justification for delay, any reason why Respondents should not be held strictly accountable for failing to comply with any relevant requirements of this Order, the measures planned and taken to minimize the delay, and a schedule for implementing the measures that will be taken to mitigate the effect of the delay. Increased costs or expenses associated with implementation of the activities called for in this Order is not a justification for any delay in performance.

XVIII. ASSURANCE OF ABILITY TO COMPLETE WORK

A. Respondents shall demonstrate their ability to complete the Work required by this Order and to pay all claims that arise from the performance of the Work by obtaining and presenting to EPA within thirty (30) days after approval of the Work Plan, one of the following: (1) a performance bond; (2) a letter of credit; (3) a guarantee by a third party; or (4) internal financial information to allow EPA to determine that Respondents have sufficient assets available to perform the Work. Respondents shall demonstrate financial assurance in an amount no less than $40,000,000, the estimate of cost for the Remedial Design and Remedial Action. If Respondents seek to demonstrate ability to complete the Remedial Action by means of internal financial information, or by guarantee of a third party, they shall re-submit such information annually, on the anniversary of the effective date of this Order. If EPA determines that such financial information is inadequate, Respondents shall, within thirty (30) days after receipt of EPA's notice of determination, obtain and present to EPA for approval one of the other three forms of financial assurance listed above.

B. At least seven (7) days prior to commencing any work at the Site pursuant to this Order, Respondents shall submit to EPA a certification that Respondents or their contractors and subcontractors have adequate insurance coverage or have indemnification for liabilities for injuries or damages to persons or property which may result from the activities to be conducted by or on behalf of Respondents pursuant to this Order. Respondents shall ensure that such insurance or indemnification

is maintained for the duration of performance of the Work required by this Order.

XIX. UNITED STATES NOT LIABLE

The United States, by issuance of this Order, assumes no liability for any injuries or damages to persons or property resulting from acts or omissions by Respondents, or their directors, officers, employees, agents, representatives, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order. Neither EPA nor the United States may be deemed to be a party to any contract entered into by Respondents or their directors, officers, employees, agents, successors, assigns, contractors, or consultants in carrying out any action or activity pursuant to this Order.

XX. ENFORCEMENT AND RESERVATIONS

A. EPA reserves the right to bring an action against any Respondents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery of any response costs incurred by the United States related to this Order and not reimbursed by Respondents. This reservation shall include but not be limited to past costs not recovered by EPA, direct costs, indirect costs, the costs of oversight, the costs of compiling the cost documentation to support oversight cost demand, as well as accrued interest as provided in Section 107(a) of CERCLA.

B. Notwithstanding any other provision of this Order, at any time during the response action, EPA may perform its own studies, complete the response action (or any portion of the response action) and seek reimbursement from Respondents for its costs, or

seek any other appropriate relief.

C. Nothing in this Order shall preclude EPA from taking any additional enforcement actions, including modification of this Order to include performance of all remedial design and remedial action as set forth in the ROD, or issuance of additional Orders, and/or additional remedial or removal actions as EPA may deem necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA, 42 U.S.C. § 9606(a), et seq., or any other applicable law. Respondents shall be liable under CERCLA Section 107(a), 42 U.S.C. § 9607(a), for the costs of any such additional actions.

D. Notwithstanding any provision of this Order, the United States hereby retains all of its information gathering, inspection and enforcement authorities and rights under CERCLA, RCRA and any other applicable statutes or regulations.

E. Respondents shall be subject to civil penalties under Section 106(b) of CERCLA, 42 U.S.C. § 9606(b), of not more than $25,000 for each day in which Respondents willfully violate, or fail or refuse to comply with this Order without sufficient cause. In addition, failure to properly provide response action under this Order, or any portion hereof, without sufficient cause, may result in liability under Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3), for punitive damages in an amount at least equal to, and not more than three times the amount of any costs incurred by the Fund as a result of such failure to take proper action.

F. Nothing in this Order shall constitute or be construed as a release from any claim, cause of action or demand in law or

equity against any person for any liability it may have arising out of or relating in any way to the Site.

G. If a court issues an order that invalidates any provision of this Order or finds that Respondents have sufficient cause not to comply with one or more provisions of this Order, Respondents shall remain bound to comply with all provisions of this Order not invalidated by the court's order.

XXI. EFFECTIVE DATE AND COMPUTATION OF TIME

This Order shall be effective 28 days after the Order is signed by the Director, Hazardous Waste Management Division. All times for performance of ordered activities shall be calculated from this effective date.

XXII. OPPORTUNITY TO CONFER

A. Respondents may confer with EPA's Deputy Director for Superfund, Hazardous Waste Management Division, or whomever the Deputy Director for Superfund may designate, to discuss this Order. The conference shall occur on either August 30th, September 4, or September 5, 1991, at 1 pm, at 75 Hawthorne Street, San Francisco, California. One conference will be held with Respondents with respect to this Order.

B. The purpose and scope of the conference shall be limited to issues involving the implementation of the response actions required by this Order and the extent to which Respondents intend to comply with this Order. This conference is not an evidentiary hearing, and does not constitute a proceeding to challenge this Order. It does not give Respondents a right to seek review of this Order, or to seek resolution of potential liability, and no official stenographic record of the conference will be made. At

any conference held pursuant to Respondents' request, Respondents may appear in person or by an attorney or other representative.

Notification of the preferred date for all interested Respondents for the conference must made by telephone within 7 days of receipt of this Order, followed by written confirmation mailed that day to Mary Masters, RPM, 75 Hawthorne Street H-7-2, San Francisco, CA 94105, (415) 744-2370.

So Ordered, this 19th day of August, 1991.

BY: Alexis Strauss for Jeff Zelikson
Director, Hazardous Waste Management Division
U.S. Environmental Protection Agency

SCOPE OF WORK
FOR
THE REMEDIAL DESIGN AND ACTION
AT
THE J.H. BAXTER SITE
WEED, SISKIYOU COUNTY, CALIFORNIA

I. PURPOSE

The purpose of this Scope of Work (SOW) at the J.H. Baxter NPL Site is to fully implement the Record of Decision (ROD) for the Site which was signed by the Regional Administrator on September 27, 1990. The U.S. EPA Superfund Remedial Design and Remedial Action Guidance (OSWER Directive 9355.0-04A, June 1986), the Final Record of Decision, the approved Remedial Design/Remedial Action (RD/RA) Work Plan (to be developed as a submittal under this SOW), this SOW, and any additional guidance provided by EPA shall be followed in designing, implementing, and submitting documents for the Remedial Action at the J.H. Baxter Site.

II. DESCRIPTION OF THE REMEDIAL ACTION

This SOW identifies the performance standards and specifications of the major components of the Remedial Action for the J.H. Baxter Site which shall be designed and implemented by the Respondents. The seven major components and one interim component of the Remedial Action are as follows:

Component 1:	Excavation, Treatment, and On-Site Disposal of Soils Contaminated with Inorganics Only
Component 2:	Excavation, Treatment, and On-Site Disposal of Soils Contaminated with Organics Only
Component 3:	Excavation, Treatment, and On-Site Disposal of Soils Contaminated with Inorganics and Organics
Component 4:	Extraction of Contaminated Groundwater, Treatment of Extracted Water to Remove

	Inorganics and Organics, and Discharge of Treated Groundwater
Component 5:	Control and Treatment of Contaminated Runoff to Prevent Movement of Site Chemicals into Beaughton Creek
Component 6:	Excavation, Treatment, and Disposal of Contaminated Sediment Within Drainages Ditches Discharging Site Runoff into Beaughton Creek
Component 7:	Perform Sediment and Trout Sampling and Other Appropriate Aquatic Organism Sampling, as Necessary, of Beaughton Creek; Perform Contaminated Sediment Removal or other Remedial Measures as Determined by EPA.
Component 8:	Dust control measures at the J.H. Baxter wood treatment facility.

The eighth component, to be implemented before all other components, will involve control of wood treatment chemical-laden dusts from the active areas of the wood treatment property.

To complete each component, the Respondents will prepare a project work plan, quality assurance plans, sampling and analysis plans, remedial design plans, remedial action plans, and operations and maintenance plans, as appropriate and specified in this scope of work. Deliverables and schedules will reflect work that has already been completed, such as construction and interim operation of the pilot groundwater treatment plant. Where feasible, the Respondents may propose and demonstrate emerging technologies to the EPA, that upon approval by EPA, may be used at the site. The demonstration and selection of alternative technologies shall be performed in a manner that does not delay the schedule stated in the Record of Decision. A description of each component and required plans are provided in the following sections.

A. Component 1 - EXCAVATION, TREATMENT, AND ON-SITE DISPOSAL OF SOILS CONTAMINATED WITH INORGANICS ONLY

1. <u>Site Planning and Control</u>

The Respondents shall identify in the Soils Components Remedial Design Plan the locations of clean equipment and materials staging and storage areas, the equipment and personnel decontamination areas, the areal extent of surface soil contamination above ROD standards, the area of soil excavation, excavated soil stockpile area, the soil treatment area, and the treated soil disposal area. The locations of these areas relative to Beaughton Creek, its tributaries, and irrigation channels; the surface of the groundwater table; springs; residential areas of Weed; and the Weed High School shall be shown on appropriate figures. The Respondents shall also identify measures that will be implemented to prevent surface water runoff and wind dispersion of contaminants from stockpiles and excavated areas. The Respondents shall also identify the disposal and treatment methods for decontamination waters and other hazardous residuals created during implementation of this component.

Unauthorized access to the areas identified in the paragraph above will be prohibited at the time of the remedial action. To prevent public access and vandalism to the site remedy components, the Respondents shall prohibit unauthorized access by use of fencing, guards, or other means of limiting access. Warning signs shall be posted at 200-foot intervals where appropriate. Areas containing soils with contaminants above the ROD standards shall be fenced and the warning signs shall advise that the area is hazardous due to chemicals in the soils. Areas designated for long-term disposal of treated soil shall be fenced and the warning

signs shall indicate the presence of the waste disposal unit. The signs shall also provide a telephone number to call for further information. Control of unauthorized access shall be established prior to implementation of any activity within the controlled area.

2. Excavation

Site soil containing inorganic contaminants at levels above the ROD standards shall be excavated and stockpiled for subsequent treatment. Excavation, handling, and stockpiling of contaminated soils shall be performed in a manner that prevents contact with non-contaminated soils, and also prevents surface water runoff and air dispersion of contaminated soils. Measures to be employed to prevent movement of contaminants shall be described in the Soils Remedy Remedial Design Plan.

3. Treatment

Excavated soil shall be treated by mixing the soil with a fixative (stabilizing) agent that will reduce leachability of contaminants to the treatment standards stated in the ROD. The fixative (stabilizing) agent employed for treatment shall be subject to pilot treatment and leachate characterization tests, as outlined in the RD Work Plan. Results of pilot testing shall be submitted to EPA for review and approval prior to use of any fixative agent at the site.

4. Disposal

All treated soil shall be disposed of on-site in a manner that is protective of human health and the environment. At a minimum, treated soil must achieve ROD treatment standards prior to

disposal.

Soil samples will be tested for leachability and total concentration using EPA's TCLP and California Title 22 test methods before and after treatment, based on frequency and criteria defined in the Soils Remedy Remedial Design Plan. Leachate and total concentrations will be compared with EPA TCLP and State of California Title 22 Total Threshold Limit Concentration (TTLC) and Soluble Threshold Limit Concentrations (STLC) limits to demonstrate compliance with treatment standards.

Treated soil with total concentrations of contaminants that are less than the TCLP, California Title 22 TTLC and STLC limits may be disposed of in accordance with California Title 23, Subchapter 15, Discharge of Waste to Land §2510 et seq. (Subchapter 15) requirements. The Respondents shall seek and obtain deed restrictions preventing development or excavations immediately adjacent to, over or through the fixed soil mass. Upon completion of the soil treatment and disposal phase, the fixed soil cells shall be closed and post-closure maintenance performed in accordance with Subchapter 15 requirements.

Treated soil with total concentrations of contaminants that are equal to or greater than either the TCLP, TTLC or the STLC limits is considered to be hazardous and shall be disposed of in lined disposal cells sited and constructed to Federal RCRA and Subchapter 15 standards, unless otherwise approved by EPA, and subject to review and comment by the State.

Upon completion of the soil treatment and disposal phase, the

treated soil shall be covered with a cap meeting the closure and post closure requirements of RCRA and Subchapter 15. Neither Federal or State permits are required for on-site remedial activities associated with CERCLA sites; however, the substantive requirements of all relevant permits must be met for on-site CERCLA activities.

5. Sampling and Monitoring

Sampling and monitoring of soil, surface water, air, groundwater, and leachate shall be performed as part of this component for those areas affected by the component. Sampling of soil during excavation shall be performed as excavation proceeds to demonstrate compliance with the ROD excavation standards for the inorganic contaminants. Monitoring of surface water and air shall be performed during the remedial action to ensure that releases of site contaminants are not occurring as a result of soil excavation and handling activities. Surface water sampling shall coincide with precipitation events. Air sampling for particulates shall be performed continuously during soil excavation and handling activities. Should contaminants be detected offsite above background in any surface water or air samples, the Respondents shall identify and implement with EPA concurrence measures to prevent subsequent releases. Groundwater and vadose zone monitoring shall be performed according to Federal RCRA (40 CFR Part 264) and California Subchapter 15 requirements. Groundwater quality and elevations shall be monitored from these wells prior to, during and after completion of the disposal phase

of this component. Unsaturated zone monitoring shall be performed immediately below each disposal cell. Leachate shall be pumped from the disposal cell leachate collection system continuously prior to construction of the final cover and automatically after closure of the cell. Samples of leachate shall be analyzed for site inorganic contaminants. Specifics of the sampling and monitoring activities shall be included in the Soils Remedy Monitoring Plan, a submittal under this Scope of Work.

B. Component 2 - EXCAVATION, TREATMENT, AND ON-SITE DISPOSAL OF SOILS CONTAMINATED WITH ORGANICS ONLY

1. Site Preparation and Control

Site preparation and control shall be as specified under Section II.A.1, above.

2. Excavation

All site soil containing organic contaminants at levels above the ROD standards shall be excavated down to the point where the groundwater table prevents effective removal, and stockpiled for subsequent treatment. Excavation of soils is expected to occur when groundwater is at or near its lowest levels. Excavation, handling, and stockpiling of contaminated soils shall be performed in a manner that prevents contact with non-contaminated and soil and prevents surface water runoff and air dispersion of contaminated soils. Measures to be employed to prevent movement of contaminants shall be described in Soils Remedy Remedial Design Plan.

3. Treatment

Excavated soil shall be treated by placing the soil in lined

treatment cells, mixing the soil with nutrients, fertilizers, and/or other organics; aerating the soil through discing or plowing; and irrigating the soil to maintain proper moisture percentage. Specifics of the component shall be addressed in the Soil Remedy Remedial Design Plan and Operations and Maintenance Plan. Soil treatment shall continue until soil samples indicate a reduction of concentrations of organics to levels below the ROD standards. After completion of soil treatment, the treated soil will be covered with a layer of clean soil and closed as provided in paragraph 4 below.

4. Disposal

All treated soil shall remain in the treatment cells or alternative cells constructed for the stockpiling and/or disposal of treated soil. Siting and construction of the treatment and disposal cells shall be in accordance with RCRA (40 CFR 264) and Subchapter 15 standards, unless otherwise approved by EPA and subject to review and comment by the State.

The treatment cells shall be maintained and monitored in a manner that is protective of human health and the environment. The soil cover shall be designed in accordance with Subchapter 15 closure requirements.

5. Sampling and Monitoring

Sampling and monitoring of soil, surface water, air, groundwater, and leachate shall be performed as part of this component. Sampling of soil during excavation shall be performed as excavation proceeds to demonstrate compliance with the ROD

excavation standards for the organic contaminants. Monitoring of surface water and air shall be performed during the remedial action to ensure that releases of site contaminants are not occurring as a result of soil excavation and handling activities. Surface water sampling shall coincide with precipitation events. Air sampling for volatiles and particulates shall be performed continuously during soil excavation and handling activities. Should contaminants be detected offsite above background in any surface water or air samples, the Respondents shall identify and implement measures with EPA approval to prevent subsequent releases. Groundwater and vadose zone monitoring shall be performed according to Federal RCRA (40 CFR Part 264) and California Subchapter 15 requirements. Groundwater quality and elevation shall be monitored from these wells prior to, during, and after completion of the treatment and disposal phase of this component. Unsaturated zone monitoring shall be performed immediately below each disposal cell. Leachate shall be pumped from the disposal cell leachate collection system continuously, or as necessary, during the biological treatment phase and prior to construction of the final cover, and through the use of an automated system after closure of the cell. During treatment, leachate may be applied to the treatment cell. Samples of leachate shall be analyzed for site organic contaminants throughout treatment, and for inorganic contaminants one time only, in the middle phase of treatment. Specifics of the sampling and monitoring activities shall be included in the Soils Remedy Monitoring Plan, a submittal under this Scope of Work.

C. Component 3 - EXCAVATION, TREATMENT, AND ON-SITE DISPOSAL OF SOILS CONTAMINATED WITH INORGANICS AND ORGANICS

1. Site Planning and Control

Site planning and control for Component 3 shall be as specified under Section II.A.1, above.

2. Excavation

Site soil containing inorganic and organic contaminants at levels above the ROD standards shall be excavated down to the point where the groundwater table prevents effective removal, and stockpiled for subsequent treatment. Excavation of soils is expected to occur when groundwater is at or near its lowest level. Excavation, handling, and stockpiling of contaminated soils shall be performed in a manner that prevents contact with non-contaminated soil and prevents surface water runoff and air dispersion of contaminated soils. Measures to be employed to prevent movement of contaminants shall be described in the Remedial Design Plan.

3. Treatment

Soil shall undergo two treatment processes. The first treatment will be by biological means to reduce levels of organic contamination and the second by fixation to reduce leachability of inorganic and residual organic contaminants. Excavated soil shall be treated by placing the soil in lined treatment cells, mixing the soil with nutrients, fertilizers, and/or other organics; aerating the soil through discing or plowing; and irrigating the soil to maintain proper moisture content. Upon completion of the biological treatment step (i.e., achievement of treatment

standards), the treated soil shall then be excavated from the treatment cells and mixed with a fixative (stabilizing) agent that will reduce leachability of contaminants to the treatment standards stated in the ROD. All treated soils shall be tested for leachability and total concentration in accordance with Component 1, Section 4. Prior to full scale soil fixation, the fixative (stabilizing) agent employed for treatment shall be subject to pilot treatment tests on site soils and tested for leachate characteristics. Results of pilot testing shall be submitted to EPA for review and approval prior to use at the site.

4. Disposal

All treated soil shall be placed back into the treatment cells or similar double-lined cells in a manner that is protective of human health and the environment. At a minimum, treated soil must achieve ROD treatment standards prior to disposal.

All treated soil shall be disposed in lined disposal cells constructed to Federal RCRA and Subchapter 15 standards. Siting and construction of the disposal cell shall be in accordance with RCRA and California Subchapter 15 standards, unless otherwise approved by EPA and subject to review and comment by the State.

Upon completion of the soil treatment and disposal phase, the treatment cells shall be closed in accordance with RCRA and California Subchapter 15 closure and post-closure requirements.

5. Sampling and Monitoring

Sampling and monitoring of soil, surface water, air, groundwater, and leachate shall be performed as part of this

1 component. Sampling of soil during excavation shall be performed
2 as excavation proceeds to demonstrate compliance with the ROD
3 excavation standards for the inorganic contaminants. Monitoring of
4 surface water and air shall be performed during the remedial action
5 to ensure that releases of site contaminants are not occurring as a
6 result of soil excavation and handling activities. Surface water
7 sampling shall coincide with precipitation events. Air sampling
8 for volatiles and particulates shall be performed continuously
9 during soil excavation and handling activities. Should
10 contaminants be detected offsite above background in any surface
11 water or air samples, the Respondents shall identify and implement
12 with EPA approval measures to prevent subsequent releases.
13 Groundwater and vadose zone monitoring shall be performed according
14 to Federal RCRA (40 CFR Part 264) and California Subchapter 15
15 requirements. Groundwater quality and elevation shall be monitored
16 from these wells prior to, during and after completion of the
17 disposal phase of this component. Unsaturated zone monitoring
18 shall be performed immediately below each disposal cell. Leachate
19 shall be pumped from the disposal cell leachate collection system
20 continuously, or as necessary, prior to construction of the final
21 cover and automatically after closure of the cell. During soil
22 treatment, leachate may be used to irrigate the treatment cells.
23 Samples of leachate shall be analyzed for site organic and
24 inorganic contaminants. Specifics of the sampling and monitoring
25 activities shall be included in the Soils Remedy Monitoring Plan, a
26 submittal under this Scope of Work.

D. Component 4 - EXTRACTION OF CONTAMINATED GROUNDWATER, TREATMENT OF EXTRACTED WATER TO REMOVE INORGANICS AND ORGANICS, AND DISCHARGE OF TREATED GROUNDWATER

1. Site Planning and Control

The Respondents shall identify in the Groundwater Remedy Remedial Design Plan areal and vertical extent of groundwater contamination as well as the locations of clean equipment and materials staging and storage areas, the equipment and personnel decontamination areas, the water treatment facility and associated tanks and piping, groundwater extraction well field, and the location of treated water disposal or discharge points and facilities. The locations of these areas relative to Beaughton Creek, its tributaries, and irrigation channels; the surface of the groundwater table; springs; residential areas of Weed; and the Weed High School shall be identified and shown on figures. The Respondents shall also identify measures that will be implemented to prevent surface water discharges from any of these facilities.

Unauthorized access shall be controlled in accordance with the requirements stated in Section II.A.1, above. Extraction wellheads and control boxes where access cannot be effectively controlled due to location within residential or active industrial areas shall be covered with a locked, steel enclosure capable of preventing unauthorized entry and infiltration by surface water and rainwater.

2. Groundwater Extraction

The Respondents shall design and construct an extraction system capable of restoring the aquifer to the ROD cleanup standards. The extraction system shall include holding tanks,

pumps and piping of sufficient size to transport water to the water treatment facility. Extraction of contaminated groundwater shall continue until levels of contaminants in groundwater are reduced to the ROD standards at the point of compliance. The point of compliance is defined as the entire aquifer within or adjacent to the site.

The Respondents shall monitor groundwater quality and the effectiveness of the extraction system on a regular basis. Based on the monitoring results, EPA may require changes to the extraction system. These changes may include increasing or decreasing pumping rates, and increasing or decreasing the numbers of pumping wells.

The Respondents shall continue to extract and treat groundwater from the plume area for up to 3 years after all wells exhibit contaminant concentrations to at or below the ROD standards. Sampling of monitoring wells (compliance monitoring) shall continue for a period of up to 30 years after completion of this Component 4 of the Remedial Action. EPA will determine the duration of the compliance monitoring after completion of this Component 4 of the Remedial Action, based on data trends in groundwater concentrations of residual contaminants. After 5 years from completion of this Component 4 of the Remedial Action, Respondents may request Agency review, and upon such request, EPA and the State shall review the need to continue this compliance monitoring requirement, based upon such data trends. If groundwater compliance monitoring indicates that the concentration

of contaminants has increased above aquifer treatment standards after cessation of pumping, the Respondents shall notify EPA and reactivate the groundwater extraction and treatment systems. At this time, the Respondents may propose an alternative plan to remediate the groundwater that is above aquifer treatment standards. This plan shall be implemented upon approval by EPA.

3. Treatment

The Respondents shall design, construct, operate, and maintain a groundwater treatment facility of sufficient size capable of treating extracted water to ROD standards. A pilot groundwater treatment facility has been constructed at the J.H. Baxter site and has been operating on an interim basis. The Respondents shall test out the groundwater treatment facility and make modifications to the facility as necessary to achieve ROD treatment standards. The Respondents shall develop an Operations and Maintenance Manual and operate the facility so that it consistently achieves the ROD treatment standards. Modifications of the facility necessary to achieve the standards shall be reported to EPA and the State, and approved by EPA prior to implementation.

The performance of the treatment system will be monitored on a regular basis and reported to EPA. EPA may require adjustments to the system as warranted by the monitoring results. Examples of adjustments can include changes in flow and pumping rates, changes in treatment scheme, or the addition of effluent polishing procedures.

The Respondents shall handle and dispose of hazardous

1 residuals from the treatment facility in a manner that is
2 protective of human health and the environment and in compliance
3 with Federal and State regulations.
4 4. Disposal
5 The Respondents shall identify in the Groundwater Remedial
6 Design Plan and then design as appropriate the disposal methods for
7 treated groundwater, filter cake, and other residuals produced
8 during water treatment. Treated water disposal options available
9 to the Respondents include, but are not limited to, industrial
10 process water use, reinjection to groundwater, discharge to
11 evaporation or percolation ponds, and discharge to percolation
12 trenches. Under no circumstance shall the Respondents discharge
13 treated water directly to Beaughton Creek, its tributaries, or
14 irrigation channels directly connected with the creek. Discharges
15 adjacent to the creek cannot involve surface drainage or seepage
16 into the creek. Reinjection directly into groundwater shall be
17 permissible only if the concentrations of contaminants in treated
18 groundwater are less than concentrations of the same constituents
19 in the receiving groundwater. Discharge of treated effluent that
20 meets ROD standards into percolation ponds, evaporation ponds,
21 percolation trenches, or through industrial process water use shall
22 be performed in a manner that will not result in site contaminants
23 above background levels or above existing aquifer contaminant
24 levels for that portion of the aquifer immediately below the point
25 of release. However, upon demonstration to EPA and the State that
26 the need for a disposal option involving the release of treated

groundwater which meets ROD standards (reinjected into the aquifer or discharged into percolation ponds, etc.) where the treated groundwater contains site contaminants above existing aquifer contaminant levels for that portion of the aquifer immediately below the point of release is identified, such a discharge may be allowed upon approval by EPA after review and comment by the State.

5. Sampling and Monitoring

The Respondents shall sample and analyze water at various steps within the treatment system (as appropriate) to demonstrate effectiveness of the process in reducing contaminants to ROD standards. Analysis of filter cake and residuals will be performed for disposal purposes. Locations and frequency of sampling shall be identified in the Groundwater Operations and Maintenance Manual as approved by EPA. The Respondents shall establish a network of monitoring wells within and adjacent to the contaminated aquifer, and adjacent to treated water discharge areas. The wells to be sampled and the frequency of sampling shall be identified in the Groundwater Monitoring Plan and implemented as approved by EPA. The Respondents shall also develop a soils and sediment sampling program to sample for buildup of site contaminants at surface discharge locations.

E. Component 5 - CONTROL AND TREATMENT OF CONTAMINATED RUNOFF TO PREVENT MOVEMENT OF SITE CHEMICALS INTO BEAUGHTON CREEK

1. Site Planning and Control

The Respondents shall identify all site areas with surface soils containing contaminants above ROD soils standards and submit to EPA a report with maps identifying such areas. The Respondents

shall prepare a Surface Water Protection Remedial Design Plan stating measures to be implemented to prevent further releases of contaminated soil and dissolved site contaminants in surface water runoff, until measures identified under Components 1, 2, 3, 5, and 6 for soil removal have been completed for the Site areas currently contaminated with wood treatment chemicals. Upon demonstration to EPA that site soils with contaminants above ROD standards have been excavated for treatment, responsibility for runoff control will belong to facility owners and operators in operation after soil removal. The plans must identify the ability to control, capture, contain, and treat the volume of water anticipated under a 25-year, 24 hour rainfall event. The Respondents shall identify all locations at the site exhibiting surface water with concentrations of site contaminants above ROD standards or with the potential of receiving runoff from contaminated soils and report these locations to EPA.

The Respondents shall also identify within the Surface Water Protection Remedial Design Plan, the measures that will be implemented to control, capture, treat and dispose of contaminated surface water generated at the treatment and disposal sites.

All surface water locations with contamination above ROD standards and not having controlled access as described under Component 1, item 1, shall have controlled access.

2. <u>Surface Water Treatment</u>

The Respondents shall develop and implement a Surface Water Protection Remedial Design Plan which will identify treatment,

reuse, and disposal options for surface water captured as part of surface water runoff control measures as discussed in Components 1,2 and 3 and Section 1 of Component 5.

3. Treated Surface Water Disposal

The Respondents shall develop and implement plans for the disposal and/or reuse of treated surface water. Disposal options must be in accordance with disposal options for treated groundwater as stated under Component 4, item 4.

4. Surface Water Sampling and Monitoring

The Respondents shall develop a Surface Water Monitoring Plan for sampling and analysis of surface water at the site. The plan shall include a surface water monitoring network and will be implemented as approved by EPA. Frequency of sampling will be stipulated in the plan, but will occur at a minimum of once during each precipitation event of 0.25 inches or greater that falls within a 24 hour period and results in runoff. This event shall be documented by the Respondents.

F. Component 6 - EXCAVATION, TREATMENT AND DISPOSAL OF CONTAMINATED SEDIMENT WITHIN DRAINAGE DITCHES DISCHARGING SITE RUNOFF INTO BEAUGHTON CREEK

1. Site Planning and Control

The Respondents, shall identify all site drainages containing sediments with site contaminants at concentrations above ROD standards and identify these locations on a site drainage map. The Respondents shall develop a Sediment Remedial Design Plan identifying the contaminated sediments and measures to be employed to excavate, treat and dispose of the contaminated sediments. The

Respondents shall also notify the local community and Siskiyou County Health Department of the locations of contaminated sediments and provide warning signs along the lengths of contaminated drainages until completion of the sediment removal action.

2. Sediment Excavation and Disposal

The Respondents shall use conventional equipment to excavate and remove all sediment containing site contaminants above ROD standards. Excavated sediments that contain site contaminants above ROD standards but below State and Federal threshold levels designating the sediment as hazardous may be disposed of on-site or off-site in a manner that is protective of human health and the environment, and is in compliance with local, State and Federal regulations. Excavated sediments that contain site contaminants above ROD standards or State threshold concentrations shall be handled as hazardous and treated and disposed of in accordance with soil treatment requirements stipulated under Components 1, 2, and 3.

3. Sampling and Monitoring

The Respondents shall monitor surface water quality during and following the sediment remedy to ensure that the remedy does not cause releases of contaminants during implementation and that the remedy remains protective of surface water quality. The Respondents shall perform confirmation sampling of sediments after completion of the removal action to verify achievement of the clean-up standards. The scope of the sampling and monitoring program shall be included in the Surface Water Monitoring Plan

which will be implemented as approved by EPA.

G. Component 7 - PERFORM SEDIMENT AND TROUT SAMPLING, AND OTHER APPROPRIATE AQUATIC BIOTA SAMPLING AS NECESSARY OF BEAUGHTON CREEK; PERFORM CONTAMINATED SEDIMENT REMOVAL OR OTHER REMEDIAL MEASURES AS DETERMINED BY EPA

1. Site Planning and Control

The Respondents, after consultation with the California Department of Fish and Game and EPA, shall develop and implement the Beaughton Sampling and Analysis Plan, for the sampling of surface water, sediments, and trout and other appropriate aquatic organisms, as necessary, in Beaughton Creek. Sampling shall be performed for that portion of the stream that flows through the Site to the discharge of the stream into the Shasta River arm of Lake Shastina. The purpose of the sampling program will be to determine whether past releases of site contaminants remain in the stream and trout and other appropriate aquatic biota, as necessary, and to determine whether a remedy for the creek is warranted.

2. Beaughton Creek Assessment Report

The Respondents, after consultation with the California Department of Fish and Game and EPA, shall develop an assessment report which will document the results of the Beaughton Creek sampling program. The report shall contain an assessment of the degree of contamination remaining in the creek, existing or potential impacts to terrestrial and trout and other aquatic biota, as necessary, an evaluation of remedies to reduce the identified impacts, and necessity for continued monitoring of the Creek. If continued monitoring is necessary, a Beaughton Creek monitoring plan shall be appended to the report. The Respondents shall submit

the report to EPA and the State for review and comment. The Respondents shall revise the assessment report based on EPA and State comments and include in the final report creek remedies that have been proposed by the Respondents and approved by the EPA in consultation with the California Department of Fish and Game.

3. Beaughton Creek Remedy

The Respondents shall develop a Beaughton Creek Remedial Design Report presenting the remedy selected by EPA. The Respondents shall implement the remedy identified in the assessment report under the supervision of the EPA in conjunction with the California Department of Fish and Game.

H. Component 8 - INTERIM DUST CONTROL AT THE J.H. BAXTER, WEED, FACILITY

The Respondents shall evaluate and implement dust control measures that will prevent emissions of visible dust from the J.H. Baxter facility in the interim period prior to implementation of components 1, 2, and 3 of the Remedial Action. Implementation of dust control measures shall not be performed in a manner that would interfere with current surface water control measures implemented at the site.

Within 21 days of the effective date of this Administrative Order, the Respondents shall provide EPA with an Interim Dust Control Plan for the J.H. Baxter facility. The Settling Defendants shall implement the Interim Dust Control Plan within 10 days of EPA's approval of the plan. The Interim Dust Control Plan shall address the Respondents' proposals for preventing emissions of arsenic-laden dust from the facility and the measures that the

Respondents shall implement to monitor for the effectiveness of the dust-control measures.

III. CLEAN-UP STANDARDS

Respondents shall meet all clean-up standards identified in the ROD with respect to the Remedial Action at the Site, including but not limited to the following ROD Standards.

A. SOIL EXCAVATION STANDARDS

Contaminant	Standard (ppm)
Arsenic	8
Chromium	500
Copper	2,500
Zinc	5,000
Pentachlorophenol	17
Carcinogenic PAHs	0.51
Dioxins	0.001
Furans	0.001

B. FIXED SOIL LEACHATE STANDARDS/ BIOLOGICALLY TREATED SOIL LEACHATE STANDARDS

Contaminant	Standard (ppm)
Arsenic	5
Chromium	5
Copper	25
Zinc	250
Pentachlorophenol	1.7
Carcinogenic PAHs	0.005
Noncarcinogenic PAHs	0.15
Dioxins	0.001

C. AQUIFER CLEAN-UP STANDARDS

Contaminant	Standard (ppb)
Arsenic	5
Chromium	8
Copper	11
Zinc	90
Benzene	1
Pentachlorophenol	2.2
Carcinogenic PAHs	5
Noncarcinogenic PAHs	5
Dioxins	0.000025

D. GROUNDWATER/SURFACE WATER TREATMENT STANDARDS

Contaminant	Standard (ppb)
Arsenic	5
Chromium	8
Copper	11
Zinc	90
Benzene	1
Pentachlorophenol	2.2
Carcinogenic PAHs	5
Noncarcinogenic PAHs	5
Dioxins	0.000025

E. SEDIMENT EXCAVATION STANDARDS

Contaminant	Standard (ppm)
Arsenic	8
Chromium	18
Zinc	26
Carcinogenic PAHs	0.5
Noncarcinogenic PAHs	0.5
Pentachlorophenol	1.0
Tetrachlorophenol	1.0

IV. SCOPE OF REMEDIAL DESIGN AND REMEDIAL ACTION

A. Task 1: REMEDIAL DESIGN WORK PLAN

1. The Respondents shall develop and submit a Remedial Design Work Plan for the groundwater, soils, sediment, and surface water components of the Remedial Action that shall document the overall management strategy and schedule for performing the design, construction, operation, maintenance, and monitoring identified for Components 1 through 7 above and submit the Work Plan for EPA review and approval. The Work Plan shall briefly describe each component of the Remedial Action, but shall present in detail any additional field or pilot testing work necessary to complete each component. The Work Plan shall include detailed discussions of the results of pilot groundwater and soil treatability studies. The

Work Plan shall also include a description of all tasks necessary to complete the Remedial Design Plans identified in Section IV.B. Task 2. Additional field work, sampling, analysis, and pilot testing shall be accompanied by a Sampling and Analysis Plan (SAP), Quality Assurance Plan (QAPP), and Health and Safety Plan documenting data collection activities, requirements, procedures, frequencies, analytical methods, quality control steps, and worker protection.

The Work Plan shall document the responsibility and authority of the parties and key personnel involved with the implementation of the Remedial Action. The Work Plan shall also include a description of qualifications of key personnel directing the Remedial Design, including contractor personnel where identifiable at this time. The Respondents shall submit the draft Remedial Design Work Plan according to the Schedule and Summary of Submittals (Section VII). The Respondents shall submit a Final Remedial Design Work Plan incorporating EPA's comments on the Draft Work Plan according to the schedule identified in the Schedule and Summary of Submittals.

The Respondents shall present in the Remedial Design Work Plan all procedures to be implemented to produce deliverables with documented technical accuracy and quality.

Respondents shall use quality assurance, quality control, and chain-of-custody procedures for all environmental [treatability, design, compliance and monitoring] samples in accordance with EPA's "Interim Guidelines and Specifications For Preparing Quality

Assurance Project Plans," December 1980, (QAMS-005/80); "Data Quality Objective Guidance," (EPA/540/G87/003 and 004); EPA NEIC Policies and Procedures Manual," May 1978, revised November 1984, (EPA 330/9-78-001-R); "U.S. EPA Region 9 Guidance for Preparing Quality Assurance Project Plans for Superfund Remedial Projects" (DC NO. 9QA-03-89) September 1989; and Preparation of a U.S. EPA Region 9 Sample Plan," November 18, 1987; and subsequent amendments to such guidelines upon notification to Respondents of such amendment by EPA. Amended guidelines shall apply only to procedures conducted after such notification. Prior to the commencement of any monitoring project, Respondents shall submit for approval by EPA, after a reasonable opportunity for review and comment by the State, a Quality Assurance Project Plan ("QAPP") to EPA and the State that is consistent with this SOW, the NCP, and applicable guidance documents. Respondents shall assure that EPA personnel and its authorized representatives are allowed access to all laboratories utilized by Respondents in implementing the Scope of Work. In addition, Respondents shall assure that such laboratories shall analyze all samples submitted to EPA pursuant to the QAPP for quality assurance monitoring. Respondents shall ensure that the laboratories utilized by them for the analysis of samples taken pursuant to this Scope of Work perform all analyses according to accepted EPA methods. Accepted EPA methods shall consist of those methods which are documented in 40 C.F.R Part 136 and <u>Test Methods for Evaluating Solid Waste, Physical/Chemical Methods</u> (SW 846), including any additions or revisions to these

requirements. Any laboratory utilized by the Respondents for analysis of samples shall demonstrate the ability to meet all Performance Standards pursuant to this Scope of Work, and shall attain a Data Quality Standard of Level IV. The laboratory shall be capable of producing submittals of sufficient quality to meet requirements described in the "Contract Lab Program Statement of Work for Inorganic Analysis," and the "Contract Lab Program Statement of Work for Organic Analysis," dated February 1988, and any amendments made thereto during the course of the implementation of this Scope of Work. Respondents shall ensure that all laboratories used by them for analysis of samples taken pursuant to this Scope of Work participate in an EPA or EPA-equivalent QA/QC program.

B. Task 2: REMEDIAL DESIGN PLANS

1. Remedial Design Plans

The Respondents shall develop final construction plans and specifications required to implement the first seven components of the Remedial Action at the Site in design phases as set forth in this Scope of Work. A minimum of two Final Design Plans shall be prepared. The soil component (Components 1, 2, 3, 5, and 6) shall be included in the Final Soil Remedy Remedial Design Plan. The groundwater component (Component 4) shall be included in a stand-alone Final Remedial Design Plan. The necessity of a design plan for the Beaughton Creek remedy will be based on the results of the Beaughton Creek assessment study (Component 7).

2. Content of Remedial Design Plans

The Respondents shall develop clear and comprehensive design plans and specifications for the soil, groundwater, sediment, and surface water components which include but are not limited to the following:

a. Discussion of the design strategy and the design basis including:
   i. Compliance with all applicable or relevant and appropriate requirements.
   ii. Minimization of environmental and public impacts.
   iii. Locations of key site features relative to the local community and environment.

b. Discussion of the technical factors of importance including:
   i. Use of currently accepted environmental control measures and technology.
   ii. The constructability of the design.
   iii. Use of currently acceptable construction practices and techniques.

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

d. Discussion of the possible sources of error and references to possible operations and maintenance problems.

e. Detailed drawings of the proposed design including:
   i. Qualitative flow sheets.
   ii. Quantitative flow sheets.

f. Tables listing equipment and specifications.

g. Tables giving material and energy balances.

h. Project schedule including key milestones and estimated time frame completion of the remedy to ROD standards.

i. Appendices including:

i. Sample calculations (one example presented and explained clearly for significant or unique design calculations).

ii. Derivation of equations essential to understanding the report.

iii. Results of laboratory or field tests.

3. Design Phases and Corresponding Submittals

The Respondents shall meet at least quarterly with EPA and the State to discuss design issues. The design of the Remedial Action shall include the phases outlined below.

a. Preliminary (30%) Design Submittal (Components 1, 2, 3, 5, and 6 only).

The Respondents shall submit the Preliminary Design for EPA review and approval when the design effort is approximately 30 percent complete according to the schedule in the Schedule and Summary of Submittals (Section VII). At this stage, the Respondents shall have field verified existing conditions at the site relative to nature and extent of contamination and have completed any pilot studies required for each of the Components 1 through 7 of the Remedial Action. Results of the sampling and pilot studies for Components 1, 2,

3, 5, and 6 shall be presented in the Preliminary Design Reports. Results for Component 7 shall be presented in the Beaughton Creek Assessment Report. The preliminary design shall outline the technical requirements of the project so that they may be reviewed to determine if the final design will provide an operable and usable Remedial Action. Supporting data and documentation shall be provided with the design documents defining the functional aspects of the program. The preliminary construction drawings by the Respondents shall reflect organization and clarity. The scope of the technical specifications shall be outlined in a manner reflecting the final specifications. The Respondents shall include with their preliminary submittals, design calculations reflecting the same percentage of completion as the designs they support.

b. Prefinal (90%) Design Submittal (Components 1 through 6)

The Respondents shall submit a Prefinal Design Report for each component 1 through 6 (a combined report for components 1, 2, 3, 5 and 6, and a separate report for component 4, according to the Schedule and Summary of Submittals. The submittals shall be at 90 percent of the completed design (i.e., prefinal). After approval of the prefinal submittals by EPA, the Respondents shall address the required revisions and submit the final design (100 percent completion) with reproducible drawings and specifications. Only the original drawings will be deemed official drawings, and bear an

engineer's seal.

Each Prefinal Design submittal shall consist of the Design Plans and Specifications, Operations and Maintenance Plan including sampling and analysis components, Capital and Operating and Maintenance Cost Estimate, Project Schedule, Construction Quality Assurance Objectives, and the Health and Safety Plan.

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications, the Respondents shall:

i. Coordinate and cross-check the specifications and drawings; and

ii. Complete the proofing of the edited specifications and required cross-checking of all drawings and specifications.

These activities shall be completed prior to the 90 percent prefinal submittals to EPA.

The Respondents shall prepare and include in the technical specifications governing treatment systems, contractor specifications for providing appropriate service visits by experienced personnel to supervise the installation, adjustment, startup and operation of the treatment systems, and training covering appropriate operational procedures once the startup has been successfully accomplished.

c. Final Design (100%) Submittal (Components 1 through 6)

The Respondents shall submit two Final Design Reports, one for the soils remedies (Components 1, 2, 3, 5, and 6) and one for the groundwater remedy for EPA review and approval according to the Schedule and Summary of Submittals (Section VII). Each Final Design submittal shall consist of the Final Design Plans and Specifications (100 percent complete), the Respondents' Final Construction Cost Estimate, the Final Operations and Maintenance Plan, Construction Quality Assurance Objectives, Final Project Schedule, and Final Health and Safety Plan. The quality of the design documents shall be such that the Respondents would be able to include them in a bid package and invite contractors to submit bids for the construction project.

d. Beaughton Creek Remedy Design Plans

Based on the results of the Beaughton Creek assessment (Component 7), a remedy for Beaughton Creek may be required. If a remedy is deemed necessary by EPA and the State of California, a Preliminary Design and Final Design report shall be prepared and submitted to EPA based on a schedule specified in the Beaughton Creek Assessment Report.

e. Characterization and Treatability Studies

EPA may require characterization and treatability studies to supplement the available technical data and to support remedial design efforts. Such studies may include but not be limited to pilot treatability studies, fixation tests, biological treatment tests, leachability studies, definition

of extent of contamination, siting studies, determination of depth to groundwater, aquifer testing, and detailed plume definition.

The Respondents shall furnish all services, including field work as required, materials, supplies, plant, labor, equipment, investigations, studies and supervision. Sufficient sampling, testing, and analysis shall be performed to optimize the required treatment and/or disposal operations and systems. There shall be an initial meeting of all principal personnel involved in the development of any characterization and treatability studies. The purpose of the meeting will be to discuss objectives, resources, communication channels, role of personnel involved, and site study parameters.

Should characterization and treatability studies be required, an interim report shall be prepared and submitted in accordance with the schedule presented in the Work Plan. The interim report shall present the results of each study along with recommended treatment or disposal system options. A review conference shall be scheduled after each interim report has been reviewed by EPA and the State. The final report of each study shall include all data taken during the testing and a summary of the results of the study.

4. <u>Operation and Maintenance Plans</u>

The Respondents shall prepare up to five Operation and Maintenance Plans to cover implementation and long-term maintenance

for the soils, groundwater, sediment, surface water, and Beaughton Creek components of the Remedial Action. Initial Draft Operation and Maintenance Plans shall be submitted for EPA review and approval simultaneously with the Prefinal Design Documents for the soil components (Components 1, 2, 3, 5 and 6), the groundwater component (4), and Beaughton Creek component (7), as necessary. The Final Operation and Maintenance Plans shall be submitted with the Final Design documents for those components. The Operation and Maintenance Plans shall be composed of the following elements:

a. Description of normal operation and maintenance (O&M):

i. Description of tasks for operation.

ii. Description of tasks for maintenance.

iii. Description of prescribed treatment or operation conditions.

iv. Schedule showing frequency of each O&M task.

b. Description of potential operating problems:

i. Description and analysis of potential operation problems.

ii. Sources of information regarding problems.

iii. Common and/or anticipated remedies.

c. Description of routine monitoring and laboratory testing including fixed soil total concentration and leachate testing, biologically treated soil testing, testing of leachate collected from treatment cells, monitoring of surface water during sediment removal, water treatment plant process steps chemical analyses, and water treatment plant discharge

chemical analyses for each corresponding and appropriate component, as applicable. The analytes of concern are those listed under Section III of this Scope of Work, or those required by RCRA and Title 22 and 23 to be necessary for the proper off-site disposition of sludges, filter cake, etc.

i. Description of monitoring tasks.

ii. Description of required laboratory tests and their interpretation. For the groundwater component (4), monitoring of influent and effluent shall be performed daily during facility startup and testout (60 days maximum), and monthly after treatment efficiencies have been demonstrated. For the soils components (2 and 3) employing biological treatment, monthly sampling of soil being treated shall be performed. Routine sampling of leachate collected from treatment and disposal cells for components 1, 2, 3, 5 and 6 shall be as described in the final monitoring report.

iii. Required data collection QAPP for each component.

iv. Schedule of monitoring frequency and date, if appropriate, when monitoring may cease for each component.

v. Description of triggering mechanisms, action criteria, and corrective actions to be performed if criteria are exceeded for groundwater, surface water, and leachate monitoring results.

vi. Description of criteria to be used to activate or

deactivate pumping wells and for normal operations of pumping wells.

d. Description of Alternative O&M:

i. Should any operation aspect of any remedial component fail, the Settling Defendant shall state alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and the environment or exceed discharge, leachate, or performance standards.

ii. Analysis of vulnerability and additional resource requirements should a failure occur.

e. Corrective Action:

i. Description of corrective action to be implemented in the event that discharge, leachate, or performance standards are exceeded during Remedial Action.

ii. Schedule for implementing these corrective actions.

f. Safety Plan:

i. Description of precautions, procedures, action levels, and personnel protective equipment.

ii. Safety tasks required in event of systems failure.

g. Description of equipment

i. Equipment identification.

ii. Installation of monitoring components.

iii. Maintenance of site equipment.

iv. Replacement schedule for equipment and installed

components.

v. Inventory of replacement parts.

h. Records and reporting mechanisms required:

i. Daily operations logs.

ii. Laboratory records.

iii. Records for operating costs.

iv. Mechanism for reporting emergencies.

v. Personnel and maintenance records.

vi. Monthly/annual reports to State agencies.

5. Cost Estimates

The Respondents shall refine the cost estimates developed in the Feasibility Study to reflect the more detailed/accurate design plans and specifications developed for each component of the Remedial Action. The cost estimates shall include capital and operation and maintenance costs. Initial Cost Estimates shall be submitted simultaneously with the Prefinal Design documents and the Final Cost Estimates with the Final Design documents for the components as set forth in the Schedule and Summary of Submittals.

6. Project Schedules

The Respondents shall develop a Project Schedule for components 1 through 7 within the time frames presented in Section VII for construction and implementation of all components of the Remedial Action. The schedule shall identify specific dates for initiation and completion of all deliverables through remedial design and the remedial action workplans for each component. Respondents shall identify approximate dates for completion of the

project and major interim milestones associated with the remedial actions. Initial Project Schedules shall be submitted simultaneously with the Prefinal Design Documents and Final Project Schedules with the Final Design Documents.

7. Construction Quality Assurance Plans

The Respondents shall identify and document the objectives and framework for the development of a construction quality assurance program for the components of the Remedial Action as set forth in the Schedule and Summary of Submittals, including but not limited to the following: responsibility and authority; personnel qualifications; inspection activities; sampling and analysis requirements; and documentation.

a. Responsibility and Authority

The Respondents shall describe fully in the CQA Plans the responsibility and authority of all parties (e.g., technical consultants, construction firms, etc.) and key personnel involved in the construction of the Components of the Remedial Action. The Respondents shall also identify a CQA officer, who shall be independent of the Supervising Contractor, and the necessary supporting inspection staff.

b. Construction Quality Assurance Personnel Qualifications

The Respondents shall set forth the qualifications of the CQA officer and supporting inspection personnel in the CQA plans with sufficient detail to demonstrate that they possess the training and experience necessary to fulfill their identified responsibilities.

c. Inspections

The Respondents shall summarize in the CQA plans the observations and tests that will be used to monitor the construction and/or installation of the components of the Remedial Action. The plan shall include the scope and frequency of each type of inspection.

d. Sampling Requirements

The Respondents shall present in the CQA plans the sampling activities, sample size, sample locations, frequency of testing, criteria for acceptance and rejection, and plans for correcting problems as addressed in project specifications for the various Components of the Remedial Action.

e. Documentation

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

8. Health and Safety Plans

The Respondents shall submit Health and Safety Plans to address the activities to be performed at the facility to implement the components of the Remedial Action, as set forth in the Schedule and Summary of Submittals (Section VII).

9. Monitoring/Confirmation Sampling Plans

The Respondents shall develop and implement soils, sediment, air, leachate, groundwater, and surface water monitoring plans as specified in the Schedule and Summary of Submittals components 1 through 6. The plans shall contain procedures for all activities presented below to demonstrate compliance with ROD standards through confirmation sampling.

Soil and sediment sampling will be performed to demonstrate compliance with ROD excavation standards and shall continue until it has been demonstrated that all soil and sediment above standards have been excavated at the site.

Air sampling shall be performed following EPA Prevention of Significant Deterioration (PSD) air monitoring procedures. Air sampling shall be performed continuously while soils are being excavated, handled, disced, and during disposal in treatment cells.

Leachate sampling shall be performed of leachate collected within the treatment and disposal cells. Leachate shall be sampled quarterly for 30 years after closure of the treatment cells.

Groundwater monitoring required to the extent necessary to implement the ROD remedies shall be performed to detect and monitor changes in contaminant concentrations of ROD analytes and of constituents of materials used in the remedy in accordance with RCRA and California Subchapter 15 requirements. Groundwater monitoring shall be performed quarterly during all phases of the Remedial Action. EPA may decrease monitoring frequency based upon EPA review of the data and after review and comment by the State. Groundwater monitoring of the plume shall continue for 30 years

1 beyond the point at which all wells indicate contaminant levels to
2 ROD standards or below. Groundwater monitoring of the soil
3 disposal and treatment cells shall occur annually for 30 years
4 after closure of the cells.
5 Unsaturated zone monitoring below the soil treatment and
6 disposal cells shall be performed monthly during Remedial Action
7 and quarterly for 30 years after closure of the cells.
8 Surface water sampling shall include points along Beaughton
9 Creek, upgradient, within, and downgradient of the site; and
10 drainages leading from the site and treatment cells. Surface water
11 sampling shall be performed after every precipitation event of
12 0.25 inches or greater over a 24 hour period and results in runoff.
13 This event shall be documented by the Respondents. Surface water
14 monitoring shall continue until all contaminated soils have been
15 excavated, placed in disposal cells, and the closure of the cells
16 has been approved by EPA.
17 The Monitoring Plans shall be developed in accordance with EPA
18 Region 9 requirements for sampling and analysis and quality
19 assurance plans. At the completion of each monitoring activity,
20 the Respondents shall issue a report stating that the requirements
21 of the Monitoring Plan have been addressed. EPA will review the
22 report and overall monitoring results and will determine whether
23 additional monitoring will be required based on EPA's assessment of
24 conditions at the site.
25 All soil, sediment, vadose zone, groundwater, and surface
26 water samples shall be analyzed for the site contaminants

identified in Section III, as applicable. Air particulate samples shall be analyzed for the inorganic contaminants only. Sampling of volatile constituents shall be performed during all soil excavation and handling activities.

The Respondents shall include within the Monitoring Plan a detailed section on Data Management which will incorporate procedures for producing and documenting data of known quality. Included will be procedures for the filing, storage, retrieval, analysis and checking of data.

V. Task 3: REMEDIAL ACTION CONSTRUCTION

Within 30 days of EPA approval of the Remedial Design Plans for any component of the Remedial Action, the Respondents shall submit to EPA a Remedial Action Work Plan, if one has not been submitted, or submit a revised Remedial Action Work Plan should the document have been developed for a previous component. Within 30 days of EPA's approval of the Remedial Action Work Plan (initial and revised), the Respondents shall initiate construction and implementation of the component(s) of the Remedial Action in accordance with the approved construction schedule. Remedial Action construction will be phased over a 3 to 5 year period to accommodate operational and financial constraints. The Respondents shall also implement the elements of the approved Operation and Maintenance plan(s).

A. REMEDIAL ACTION WORK PLANS

The Respondents shall upon completion of the first Remedial Design Report for any component of the Remedial Action revise the

Remedial Design Work Plan to become the Remedial Action Work Plan. The Remedial Action Work Plan shall reflect changes in personnel, contractors, schedules, tasks, activities, submittals, meetings, inspections, etc., that will result from implementation of the Remedial Designs for each component. The Remedial Action Work Plan shall be revised as the remedial design for each component of the Remedial Action is completed.

B. INSPECTION ACTIVITIES

Inspections with EPA or its authorized representative in attendance may be performed to verify compliance with the environmental requirements of each Component of the Remedial Action and shall include, but not be limited to, air quality and emissions monitoring records, soil and water sampling records, waste disposal records, etc. In addition to oversight inspections, the Respondents shall conduct the following activities.

1. <u>Preconstruction Inspection and Meetings</u>

EPA may require the Respondents to conduct with EPA and the State preconstruction inspections and meetings to:

a. Review methods for documenting and reporting inspection data for the various Components of the Remedial Action.

b. Review methods for distributing and storing documents and reports.

c. Review work area security and safety protocols.

d. Discuss any appropriate modifications of the Construction Quality Assurance Plans to ensure that site-specific considerations are addressed.

e. Conduct a site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspections and meetings shall be documented by a designated person and minutes shall be transmitted to all parties.

2. Prefinal Inspections

Upon preliminary completion of construction of any Component of the Remedial Action, Respondents shall notify EPA for the purpose of conducting a Prefinal Inspection. EPA may require a Prefinal Inspection which shall consist of a walk-through inspection of the entire area of the site project related to that component. The inspection is to determine whether the project is complete and consistent with the contract documents and the EPA-approved Remedial Action. Any outstanding construction items discovered during the inspection shall be identified and noted. Additionally, treatment equipment shall be operationally tested by the Respondents. The Respondents shall certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. The Respondents shall outline in the Prefinal Inspection Report the outstanding construction items, actions required to resolve items, completion date for these items, and date for Final Inspection.

3. Final Inspections

Upon completion of any outstanding construction items of any component, the Respondents shall notify EPA for the purpose of

conducting a final inspection. EPA may require a Final Inspection which shall consist of a walk-through inspection of the site project related to that component. The Prefinal Inspection Report will be used as a checklist with the Final Inspection focusing on the outstanding construction items identified in the Prefinal Inspection. EPA will confirm that outstanding items have been resolved, or identify items still outstanding as necessary to allow completion of construction. A Final Inspection Report shall document the findings and actions taken to address deficiencies identified in the Prefinal Inspection Report.

VI. Task 4: OTHER REPORTS AND SUBMITTALS

The Respondents shall prepare plans, specifications, and reports as set forth in Sections I through V above to document the design, construction, operation, maintenance, and monitoring of the Components of the Remedial Action. Other documentation shall include, but not be limited to, the following items.

A. PROGRESS REPORTS

The Respondents shall at a minimum provide EPA with signed monthly progress reports during the design and construction phases and monthly progress reports for operation and maintenance as appropriate for the various Components of the Remedial Action. The monthly reports shall address each Component of the Remedial Action and shall contain the following items.

1. A description and estimate of the percentage completed of the Remedial Design, Construction, or Remedial Action for each component.

2. Summaries of all findings.

3. Summaries of all changes made in the RD/RA during the reporting period.

4. Summaries of all contacts with representatives of the local community, public interest groups, or State government during the reporting period.

5. Summaries of all problems or potential problems related to each component encountered during the reporting period.

6. Actions being taken to rectify problems.

7. Changes in personnel during the reporting period.

8. Projected work for each component for the next reporting period.

9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. ANNUAL REPORT

The Respondents shall submit to EPA within 30 days of the start of each calendar year an Annual Report. The Annual Report shall present summaries and highlights of work accomplished the previous year, including all milestones met. The Annual Report shall also contain copies of all data collected and produced during the previous year.

C. REMEDIAL ACTION IMPLEMENTATION REPORT (REPORT OF COMPLETION OF CONSTRUCTION)

1. The Respondents shall at the "completion" of construction of each component of the Remedial Action (that is, at the point at which each component has been operating according to specifications), submit a Remedial Action Implementation Report to

EPA. A minimum of 2 reports will be required, addressing components 1, 2, 3, 5 and 6 together, and component 4 separately. The reports shall document that the project is consistent with the design specifications, and that each component is performing adequately. The Reports shall include but not be limited to the following elements.

a. Synopsis of the component addressed in the report and certification of the design and construction.

b. Explanation of any modifications to the plans and why these were necessary for the component.

c. Listing of the criteria, established before the component of the Remedial Action was initiated, for judging the functioning of the component and also explaining any modifications to these criteria.

d. Results of facility monitoring, indicating that the component will meet or exceed performance criteria.

e. Explanation of the operation and maintenance (including monitoring and schedule for the component) to be undertaken at the facility.

D. WORK COMPLETION REPORT

Respondents shall provide a Work Completion Report to EPA at which time the Respondents conclude that all phases of work presented in this Scope of Work have been fully performed. The Work Completion Report will contain sufficient information to demonstrate that all the Performance Standards have been met and all Operation and Maintenance activities have been completed to the

satisfaction and requirements of the Administrative Order. EPA will review the Completion Report, and upon such review may require additional activities as necessary to complete the work.

VII. SCHEDULE AND SUMMARY OF SUBMITTALS

Submittal	Due Date
A. Remedial Design Work Plan	
Draft Remedial Design Work Plan	30 days after effective date of the UAO
Final Remedial Design Work Plan	30 days after receipt of EPA comments on Draft Work Plan
Draft Characterization and Treatability Studies Sampling and Analysis Plan	Submitted with Final Remedial Design Work Plan
Draft Characterization and Treatability Studies Quality Assurance Project Plan	Submitted with Final Remedial Design Work Plan
Final Characterization and Treatability Studies Sampling and Analysis Plan	21 days after EPA comments on Draft SAP
Final Characterization and Treatability Studies Quality Assurance Project Plan	21 days after EPA comments on Draft QAPP
Characterization and Treatability Studies Health and Safety Plan	Submitted with Characterization and Treatability Studies Sampling and Analysis Plans
Report of Results of Characterization and Treatability Studies	In accordance with schedule in Remedial Design Work Plan

B. <u>Soil Components (1, 2, 3, 5 and 6)</u>

- Preliminary Design (30% Completion)	30 days after EPA approval of Final RD Work Plan
- Prefinal Design (90% Completion) 1. Draft Design 2. Draft Operation & Maintenance 3. Draft Cost Estimate 4. Draft RA Project Schedule 5. Draft Construction Quality Assurance Plan 6. Draft RA Health & Safety Plan 7. Draft RA O&M QAPP 8. Draft Monitoring/Confirmation Sampling Plan	75 days after EPA comments on Preliminary Design
- Final Design (100% completion) 1. Final Design 2. Final Operation & Maintenance 3. Final RA Cost Estimate 4. Final RA Project Schedule 5. Final Construction Quality Assurance Plan 6. Final RA Health & Safety Plan 7. Final O&M QAPP 8. Final Monitoring/Confirmation Sampling Plan	30 Days after EPA comments on Prefinal Design
- Draft Remedial Action Work Plan	Submitted with Final Remedial Design Plan
- Final Remedial Action Work Plan	30 days after EPA comments on Draft Remedial Action Work Plan
- Notice of Preconstruction Inspection	Submitted with Final

and Meeting	Design Plan
- Preconstruction Inspection and Meeting Report	15 days after meeting
- Notice of Prefinal Inspection	In accordance with Final RA schedule
- Prefinal Inspection Report	15 days after Prefinal Inspection
- Notice of Final Inspection	30 days after Prefinal Inspection
- Final Inspection Report	15 days after Final Inspection
- Remedial Action Implementation Report	60 Days after EPA approval of Final Inspection Report
- Progress Reports	Monthly
- Annual Report	Annually
C. <u>Groundwater Component (4)</u>	
- Prefinal Design (90% Completion) 1. Draft Design 2. Draft Operation & Maintenance 3. Draft Cost Estimate 4. Draft RA Project Schedule 5. Draft Construction Quality Assurance Plan 6. Draft RA Health & Safety Plan 7. Draft RA O&M QAPP 8. Draft Monitoring/Confirmation Sampling	75 days after EPA approval of Final RD Work Plan
- Final Design (100% completion) 1. Final Design 2. Final Operation & Maintenance	30 Days after EPA comments on Prefinal Design

3. Final RA Cost Estimate
4. Final RA Project Schedule
5. Final Construction Quality Assurance Plan
6. Final RA Health & Safety Plan
7. Final O&M QAPP
8. Final Monitoring/Confirmation Sampling Plan

- Draft Remedial Action Work Plan	Submitted with Final Remedial Design Plan
- Final Remedial Action Work Plan	30 days after EPA comments on Draft Remedial Action Work Plan
- Notice of Preconstruction Inspection and Meeting	Submitted with Final Design Plan
- Preconstruction Inspection and Meeting Report	15 days after meeting
- Notice of Prefinal Inspection	In accordance with Final RA schedule
- Prefinal Inspection Report	15 days after Prefinal Inspection
- Notice of Final Inspection	30 days after Prefinal Inspection
- Final Inspection Report	15 days after Final Inspection
- Remedial Action Implementation Report	60 days after approval of Final Inspection Report
- Progress Reports	Monthly
- Annual Report	Annually

D. Surface Water Control Component (5)

The Surface Water Control Component Design will be submitted as part of Soil Components Design Plans (Item VII, B, above).

E. Sediment Component (6)

The Sediment Component Design will be submitted as part of Soil Components Design Plan (Item VII, B, above).

F. Beaughton Creek Assessment Component (7)

- Draft Beaughton Creek Assessment Sampling and Analysis Plan	30 days after EPA approval of the Work Plan
- Final Beaughton Creek Assessment SAP	30 days after EPA comments on the Draft SAP
- Notice of Implementation of SAP	In accordance with schedule in SAP
- Draft Beaughton Creek Assessment Report	60 days after completion of field work
- Final Beaughton Creek Assessment Report	30 days after EPA comments on Draft Report
- Preliminary Design (30% completion, if necessary)	30 days after EPA approval of Final Assessment Report
- Prefinal Design (90% Completion) 1. Draft Design 2. Draft Operation & Maintenance 3. Draft Cost Estimate 4. Draft RA Project Schedule 5. Draft Construction Quality Assurance Plan 6. Draft RA Health & Safety Plan	75 days after EPA comments on Preliminary Design

7. Draft RA O&M QAPP 8. Draft Monitoring/Confirmation Sampling Plan	
- Final Design (100% completion) 1. Final Design 2. Final Operation & Maintenance 3. Final RA Cost Estimate 4. Final RA Project Schedule 5. Final Construction Quality Assurance Plan 6. Final RA Health & Safety Plan 7. Final O&M QAPP 8. Final Monitoring/Confirmation Sampling Plan	30 Days after EPA comments on Prefinal Design
- Draft Remedial Action Work Plan	Submitted with Final Remedial Design Plan
- Final Remedial Action Work Plan	30 days after EPA comments on Draft Remedial Action Work Plan
- Notice of Preconstruction Inspection and Meeting	Submitted with Final Design Plan
- Preconstruction Inspection and Meeting Report	15 days after meeting
- Notice of Prefinal Inspection	In accordance with Final RA schedule
- Prefinal Inspection Report	15 days after Prefinal Inspection
- Notice of Final Inspection	30 days after Prefinal Inspection
- Final Inspection Report	15 days after Final Inspection

- Remedial Action Implementation Report	60 days after EPA approval of Final Inspection Report
- Progress Reports	Monthly
- Annual Report	Annually

G. <u>J.H. Baxter Wood Treatment Property Dust Control Plan Component (8)</u>

21 Days after effective date of the UAO