UNITED STATES ENVIRONMENTAL PROTECTION AGENC
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

December 30, 1992

Mr. Charles Buril
Environmental Affairs Office
Jet Propulsion Laboratory
4800 Oak Grove Drive
M/S 301-420
Pasadena, CA 91109-8099

Dear Chuck:

Enclosed you will find the Final NASA JPL FFA. I want to thank you for your help in expediting matters during the negotiation of the Agreement. I believe that we are all encouraged by the timely manner in which the Parties were able to complete negotiations of the Agreement.

As you are aware, the EPA Regional Administrator signed the FFA the morning of December 23, 1992. As stated in the FFA, Section 36, upon signature of the FFA by EPA, the Agreement is effective. There are two deadlines coming up soon, which are crucial that the facility meet in order to comply with the FFA. They are as follows:

1. Section 36 Effective Date and Public Comment

In Subsection 36.3 it is stated that, "Within fifteen days after EPA, as the last signatory, executes this Agreement, NASA shall announce the availability of this Agreement to the public for a minimum forty-five day period of review and comment, but ending no earlier than the date on which the comments from EPA and the State are due, under Section 8, on proposed deadlines. Publication shall include at least two major local newspapers of general circulation". Please note the fifteen day deadline is January 7, 1993.

2. Section 8 Deadlines

In Subsection 8.2 it is stated that NASA shall propose deadlines, and announce and make available for public comment the proposed deadlines, for completion of the draft primary documents for each response action as listed in the subsection, within forty-five days after the effective date of this Agreement. Please note that the forty-five day deadline is February 6, 1993, but will default to February 8, 1993, as the sixth falls on a Saturday.

Prior to your time off for the holidays, we discussed possible dates for the next scoping meeting. It appears after talking with the other Project Managers, that the latest we can schedule the meeting will be January 14 and 15, 1993. All Parties involved have obligations the three weeks following January 14 and 15. The meeting has been tentatively scheduled for these dates. I will look forward to hearing from you when your return to work.

Again thank you for you help and consideration with the FFA negotiations. We look forward to working with the facility in an effective and timely manner.

Sincerely,

Michelle Schutz

Michelle Schutz
Remedial Project Manager

cc: Ms. Dora Meyer - NASA Resident Office
Ms. Penny Nakashima - DTSC Remedial Project Manager
Mr. Hank Yacoub/Ms. Tizita Bekele - LA RWQCB Remedial Project Manager
Mr. James Wright - NASA Headquarters
Mr. Bruce Ross - URS Consultants

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9

AND THE

CALIFORNIA STATE
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

AND THE

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

AND THE

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

IN THE MATTER OF:	
The United States National Aeronautics and Space Administration	Federal Facility Agreement Under CERCLA Section 120
Jet Propulsion Laboratory	Administrative Docket Number:

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Based on the information available to the Parties on the effective date of this FEDERAL FACILITY AGREEMENT (Agreement), and without trial or adjudication of any issues of fact or law, the Parties agree as follows:

1. JURISDICTION

1.1 Each Party is entering into this Agreement pursuant to the following authorities:

a. The United States Environmental Protection Agency (EPA), enters into those portions of this Agreement that relate to the Remedial Investigation/Feasibility Study (RI/FS) pursuant to section 120(e)(1) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. section 9620(e)(1), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Pub. L. 99-499 (hereinafter jointly referred to as CERCLA), and the Resource Conservation and Recovery Act (RCRA) sections 6001, 3008(h), 3004 and 3005, and 7003, 9001 through 9010, 42 U.S.C. sections 6961, 6928(h), 6924 and 6925, 6973, and 6991 through 6991i, as amended by the Hazardous and Solid Waste Amendments of 1984 (HSWA) (hereinafter jointly referred to as RCRA), the Clean Water Act (CWA), 33 U.S.C. sections 1251 et seq., Safe Drinking Water Act (SDWA), 42 U.S.C. 300f et seq., and Executive Order (E.O.) 12580;

b. EPA enters into those portions of this Agreement that relate to remedial actions pursuant to CERCLA section 120(e)(2), 42 U.S.C. section 9620(e)(2), RCRA sections 6001, 3008(h), 3004 and 3005, 9001 through 9010, and 7003, 42 U.S.C. sections 6961, 6928(h), 6924 and 6925, 6991 through 6991i and 6973, the Clean Water Act, 33 U.S.C. sections 1251 et seq., and Executive Order 12580;

c. The National Aeronautics and Space Administration (NASA) enters into those portions of this Agreement that relate to the RI/FS pursuant to CERCLA section 120(e)(1), 42 U.S.C. section 9620(e)(1), RCRA sections 6001, 3008(h) and 3004 and 3005, 42 U.S.C. sections 6961, 6928(h), 6924 & 6925, the Clean Water Act, 33 U.S.C. sections 1251 et seq., Executive Order 12580, and the National Environmental Policy Act (NEPA), 42 U.S.C. section 4321, and the National Aeronautics and Space Act of 1958, as amended, 42 U.S.C. 2451 et seq.;

d. NASA enters into those portions of this Agreement that relate to remedial actions pursuant to CERCLA section 120(e)(2), 42 U.S.C. section 9620(e)(2), RCRA sections 6001,

3008(h), and 3004 and 3005, 42 U.S.C. sections 6961, 6928(h), 6924 & 6925, the Clean Water Act, 33 U.S.C. sections 1251 et seq., Executive Order 12580, and the National Aeronautics and Space Act of 1958, as amended, 42 U.S.C. 2451 et seq.; and

e. The California Department of Toxic Substances Control (DTSC) enters into this agreement pursuant to CERCLA sections 120(f) and 121, 42 U.S.C. sections 9620(f) and 9621; the California Health and Safety Code, Division 20, Chapters 6.5 and 6.8 and Governor's Reorganization Plan No. 1, dated May 17, 1991 (uncodified).

f. The California Regional Water Quality Control Board, Los Angeles Region (RWQCB) enters into this agreement pursuant to CERCLA section 120(f) and 121, 42 U.S.C. section 9620(f) and 9621; and Division 7 of the California Water Code.

2. PARTIES

2.1 The Parties to this Agreement are EPA, DTSC, RWQCB, and NASA. The terms of the Agreement shall apply to and be binding upon EPA, DTSC, RWQCB, and NASA.

2.2 This Agreement shall be enforceable against all of the Parties to this Agreement. This Section shall not be construed as an agreement to indemnify any person. NASA shall notify its agents, members, employees, response action contractors for the Site, and all subsequent owners, operators, and lessees of the Site, of the existence of this Agreement.

2.3 Each Party shall be responsible for ensuring that its contractors comply with the terms and conditions of this Agreement. Failure of a Party to provide proper direction to its contractors and any resultant noncompliance with this Agreement by a contractor shall not be considered a Force Majeure event or other good cause for extensions under Section 9 (Extensions), unless the Parties so agree or unless established pursuant to Section 12 (Dispute Resolution). NASA will notify EPA, DTSC and the RWQCB of the identity and assigned tasks of each of its contractors performing work under this Agreement upon their selection.

2.4 Within thirty (30) days of the effective date of the Agreement, DTSC and RWQCB shall select a State Lead Agency for purposes of this Agreement, and shall notify the other Parties. The State Lead Agency will be selected pursuant to -- and perform the functions described in -- the Memorandum of Understanding between the Department of Health Services and the State Water Resources Control Board dated August 1, 1990, until such times as it is terminated or superseded by another agreement between DTSC and RWQCB. Copies of said state memorandum or memoranda shall be made an attachment to the Agreement. When reasonably necessary to effectuate this Agreement, the State may change the State Lead Agency during the performance of the Agreement. Such change of State Lead Agency is not subject to dispute resolution. The State shall notify the other Parties of such change of State Lead Agency within fourteen (14) days after the decision is made. If the State Lead Agency changes, the new State Lead Agency will accept all work previously accepted by the State, subject to Section 12, Dispute Resolution.

2.5 Prior to the issuance of their respective comments under Section 7 (Consultation), DTSC and the RWQCB shall use their best efforts to coordinate comments.

3. DEFINITIONS

3.1 Except as noted below or otherwise explicitly stated, the definitions provided in CERCLA, CERCLA case law, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) shall control the meaning of terms used in this Agreement.

a. "Agreement" shall refer to this document and shall include all Appendices to this document to the extent they are consistent with the original Agreement as executed or modified. All such Appendices shall be made an integral and enforceable part of this document. Copies of Appendices shall be available as part of the administrative record, as provided in Subsection 26.3.

b. "ARARs" shall mean Federal and State applicable or relevant and appropriate requirements, standards, criteria, or limitations, identified pursuant to section 121 of CERCLA. ARARs shall apply in the same manner and to the same extent that such are applied to any non-governmental entity, facility, unit, or site, as defined in CERCLA and the NCP. See CERCLA section 120(a)(1), 42 U.S.C. section 9620(a)(1).

c. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation and Liability Act, Public Law 96-510, 42 U.S.C. sections 9601 et seq., as amended by the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499, and any subsequent amendments.

d. "Days" shall mean calendar days, unless business days are specified. Any submittal that under the terms of this Agreement would be due on Saturday, Sunday, or Federal or State holidays shall be due on the following business day. References herein to specific numbers of days shall be understood to exclude the day of occurrence.

e. "DTSC" shall mean the California Department of Toxic Substances Control, its employees and authorized representatives.

f. "EPA" shall mean the United States Environmental Protection Agency, its employees and authorized representatives.

g. "Effective Date" shall mean the date of the signature by the last party to sign this Agreement.

h. "Federal Facility" shall mean the NASA Jet Propulsion Laboratory (JPL) located at 4800 Oak Grove Drive, Pasadena, California, and any real property associated with this facility.

i. "Feasibility Study" or "FS" means a study conducted pursuant to CERCLA and the NCP which fully develops, screens and evaluates in detail remedial action alternatives to prevent, mitigate, or abate the migration or the release of hazardous substances, pollutants, or contaminants at and from the Site. NASA shall conduct and prepare the FS in a manner to support the intent and objectives of Section 17 (Statutory Compliance/RCRA-CERCLA Integration).

j. "Meeting" in regard to Project Managers, shall mean an in-person discussion at a single location or a conference telephone call of all Project Managers. A conference call will suffice for an in-person meeting at the concurrence of the Project Managers.

k. "NASA" shall mean the National Aeronautics and Space Administration, its employees and authorized representatives.

l. "Natural Resources Trustee(s)" or "Federal or State Natural Resources Trustee(s)" shall have the same meaning and authority as provided in CERCLA and the NCP.

m. "Natural Resource Trustee(s) Notification and Coordination" shall have the same meaning as provided in CERCLA and the NCP.

n. "National Contingency Plan" or "NCP" shall refer to the regulations contained in 40 CFR 300.1, et seq. and any subsequent amendments.

o. "Operable Unit" shall have the same meaning as provided in the NCP.

p. "Operation and Maintenance" shall mean activities required to maintain the effectiveness of response actions.

q. "On-Scene Coordinator" or "OSC" shall have the same meaning and authority as provided in the NCP.

r. "RCRA" or "RCRA/HSWA" shall mean the Resource Conservation and Recovery Act of 1976, Public Law 94-580, 42 U.S.C. sections 6901 et seq., as amended by the Hazardous and Solid Waste Amendments of 1984, Public Law 98-616, and any subsequent amendments.

s. "Remedial Design" or "RD" shall have the same meaning as provided in the NCP.

t. "Remedial Investigation" or "RI" means that investigation conducted pursuant to CERCLA and the NCP, as supplemented by the substantive provisions of the EPA RCRA Facilities Assessment (RFA) guidance. The RI serves as a mechanism for collecting data for Site and waste characterization, and conducting treatability studies as necessary to evaluate the performance and cost of treatment technologies. The data gathered during the RI will also be used to conduct a baseline risk assessment, perform a feasibility study, and support the design of a selected remedy. NASA shall conduct and prepare the RI in a manner to support the intent and objectives of Section 17 (Statutory Compliance/RCRA-CERCLA Integration).

u. "Remedy" or "Remedial Action" or "RA" shall have the same meaning as provided in section 101(24) of CERCLA, 42 U.S.C. section 9601(24), and the NCP, and may consist of Operable Units.

v. "Remove" or "Removal" shall have the same meaning as provided in section 101(23) of CERCLA, 42 U.S.C. section 9601(23), and the NCP.

w. "Remedial Project Manager" or "RPM" shall have the same meaning and authority as Project Manager (PM) as provided in Section 18.

x. "Respond" or "Response" shall have the same meaning as provided in section 101(25) of CERCLA, and means remove, removal, remedy, or remedial action, including enforcement activities related thereto.

y. "RWQCB" shall mean the California Regional Water Quality Control Board, Los Angeles Region, its employees and authorized representatives.

z. "Site" shall include the "Federal Facility" of NASA JPL as defined above and the "facility" as defined in CERCLA, and any area off the Federal Facility to or under which a release of hazardous substances has migrated, or threatens to migrate, from a source on or at NASA JPL, and any area necessary for performance of response actions as to those sources. For purposes of obtaining permits, the term "on-site" shall have the same meaning as provided in the NCP and "off-site" shall mean all locations that are not "on-site".

aa. "State" shall mean the State of California, its employees and authorized representatives, and shall refer to both DTSC and RWQCB unless otherwise specified.

bb. "State Lead Agency" shall mean the Party to this Agreement selected jointly by DTSC and the RWQCB to act as a "State Lead Agency" pursuant to subsection 2.4 hereinabove.

4. PURPOSES

4.1 The general purposes of this Agreement are to:

a. Ensure that the environmental impacts associated with past and present activities at the Site are thoroughly investigated and appropriate remedial action is taken as necessary to protect the public health, welfare and the environment;

b. Establish a procedural framework and schedule for developing, implementing, and monitoring appropriate response actions at the Site in accordance with CERCLA, the NCP, Superfund guidance and policy, RCRA, RCRA guidance and policy, the CWA, the SDWA, and applicable State law;

c. Facilitate cooperation, exchange of information and participation of the Parties in such actions; and

d. Ensure the adequate assessment of potential injury to natural resources, the prompt notification, cooperation, and coordination with the Federal and State Natural Resources Trustees necessary to guarantee the implementation of response actions to achieve appropriate cleanup levels.

4.2 Specifically, the purposes of this Agreement are to:

a. Identify Operable Units (OUs) that are appropriate at the Site prior to the implementation of final remedial action(s) for the Site. OUs shall be identified and proposed to the Parties as early as possible.

b. Establish requirements for the performance of a Remedial Investigation ("RI") to determine fully the nature and extent of the threat to the public health or welfare or the environment caused by the release and threatened release of hazardous substances, pollutants, or contaminants at the Site and to establish requirements for the performance of a Feasibility Study ("FS") for the Site to identify, evaluate, and select alternatives for the appropriate remedial action(s) to prevent, mitigate, or abate the release or threatened release of hazardous substances, pollutants, or contaminants at the Site in accordance with CERCLA and applicable State law;

c. Identify the nature, objective, and schedule of response actions to be taken at the Site. Response actions at the Site shall attain that degree of cleanup of hazardous substances, pollutants or contaminants mandated by CERCLA and applicable State law;

d. Implement the selected remedial actions(s) in accordance with CERCLA and applicable State law;

e. Assure compliance, through this Agreement, with RCRA and other Federal and State laws and regulations for matters covered herein;

f. Coordinate response actions at the Site with the mission and support activities at NASA JPL;

g. Expedite the cleanup process as necessary to protect human health and the environment;

h. Provide for State involvement in the initiation, development, selection, and enforcement of remedial actions to be undertaken at the Site, including the review of all applicable data as it becomes available and the development of studies, reports, and action plans; and to identify and integrate State ARARs into the remedial action process; and

i. Provide for operation and maintenance of any remedial action selected and implemented pursuant to this Agreement.

5. DETERMINATIONS

5.1 This Agreement is based upon the placement of NASA JPL, Pasadena, California, on the National Priorities List (NPL) by the Environmental Protection Agency on October 14, 1992, 57 Federal Register 47180.

5.2 JPL is a facility under the jurisdiction, custody, or control of NASA within the meaning of Executive Order (E.O.) 12580.

5.3 JPL is a federal facility under the jurisdiction of NASA within the meaning of CERCLA section 120, 42 U.S.C. section 9620.

5.4 NASA is authorized to receive notification by the State of its ARARs as required by CERCLA section 121(d)(2)(A)(ii), 42 U.S.C. section 9621(d)(2)(A)(ii).

5.5 The authority of NASA to exercise the delegated removal authority of the President pursuant to CERCLA section 104 and 121, 42 U.S.C. section 9604 and 9621, is not altered by this Agreement.

5.6 The actions to be taken pursuant to this Agreement are reasonable and necessary to protect the public health, welfare, or the environment.

5.7 There are areas within the boundaries of the Site where hazardous substances have been deposited, stored, placed, or otherwise come to be located as defined in 42 U.S.C. section 9601(9) and (14).

5.8 There have been releases of hazardous substances, pollutants or contaminants at or from the Federal Facility into the environment within the meaning of 42 U.S.C. sections 9601(22), 9604, 9606, and 9607.

5.9 With respect to these releases, NASA is an owner/ operator and/or generator subject to the provisions of 42 U.S.C. section 9607.

5.10 Included as Attachment B to this Agreement is a map showing source(s) of suspected contamination and the areal extent of known contamination, based on information available at the time of the signing of this Agreement.

6. WORK TO BE PERFORMED

6.1 The Parties agree to perform all tasks, obligations and responsibilities undertaken pursuant to this Agreement in accordance with federal law including, CERCLA and CERCLA guidance and policy, the NCP, pertinent provisions of RCRA and RCRA guidance and policy, the CWA, the SDWA, and Executive Order 12580; applicable State laws and regulations; and all terms and conditions of this Agreement including documents prepared and incorporated in accordance with Section 7 (Consultation).

6.2 NASA agrees to undertake, seek adequate funding for, fully implement, and report on the following tasks, with participation of the Parties as set forth in this Agreement:

a. Remedial Investigations of the Site;

b. Federal and State Natural Resource Trustee Notification and Coordination for the Site;

c. Feasibility Studies for the Site;

d. All response actions, including Operable Unit response actions, for the Site; and

e. Operation and maintenance of response actions at the Site.

6.3 The Parties agree to:

a. Make their best efforts to expedite the initiation of response actions for the Site, particularly for Operable Units; and

b. Carry out all activities under this Agreement so as to protect public health, welfare, and the environment.

6.4 Upon request, EPA, DTSC and the RWQCB agree to provide any Party with guidance documents or reasonable assistance in obtaining guidance documents relevant to the implementation of this Agreement.

7. CONSULTATION: Review and Comment Process for Draft and Final Documents

7.1 Applicability: The provisions of this Section establish the procedures that shall be used by the Parties to provide each other with appropriate technical support, notice, review, comment, and response to comments regarding RI/FS and RD/RA documents, specified herein as either primary or secondary documents. In accordance with CERCLA section 120, 42 U.S.C. section 9620, NASA will normally be responsible for issuing primary and secondary documents to EPA, DTSC and the RWQCB. As of the effective date of this Agreement, all draft, draft final and final primary and secondary documents identified herein shall be prepared, distributed and subject to dispute in accordance with Subsections 7.2 through 7.10 below. The designation of a document as "draft" or "final" is solely for purposes of consultation with EPA, DTSC and the RWQCB in accordance with this Section. Such designation does not affect the obligation of the Parties to issue documents, which may be referred to herein as "final", to the public for review and comment as appropriate and as required by law.

7.2 General Process for RI/FS and RD/RA documents:

a. Primary documents include those reports that are major, discrete portions of RI/FS and/or RD/RA activities. Primary documents are initially issued by NASA in draft, subject to review and comment by EPA, DTSC and the RWQCB. Following receipt of comments on a particular draft primary document, NASA will respond to the comments received and issue a draft final

primary document subject to dispute resolution. The draft final primary document will become the final primary document either thirty (30) days after the receipt by EPA, DTSC and the RWQCB of a draft final document if dispute resolution is not invoked or as modified by decision of the dispute resolution process.

b. Secondary documents include those reports that are discrete portions of the primary documents and are typically input or feeder documents. Secondary documents are issued by NASA in draft subject to review and comment by EPA, DTSC and the RWQCB. Although NASA will respond to comments received, the draft secondary documents may be finalized in the context of the corresponding primary documents. A secondary document may be disputed at the time the corresponding draft final primary document is issued.

7.3 Primary Documents:

a. NASA shall complete and transmit drafts of the following primary documents for each Operable Unit and for the final remedy to EPA, DTSC and the RWQCB for review and comment in accordance with the provisions of this Section; provided, however, that NASA need not complete a draft primary document for an Operable Unit if: (i) the same primary document completed or to be completed with respect to another Operable Unit covers all topics relevant to the Operable Unit at issue; and (ii) the Parties agree in writing that such draft primary document need not be completed. The following documents, when applicable, shall be primary documents:

(1) RI/FS Workplans;
(2) Sampling and Analysis Plan which includes a Field Sampling Plan and a Quality Assurance Project Plan;
(3) Community Relations Plans (CRP) (May be amended as appropriate to address Operable Units. Any such amendments shall not be subject to the threshold requirements of Subsection 7.10. Any disagreement regarding amendment of the CRP shall be resolved pursuant to Section 12 (Dispute Resolution));
(4) RI Reports (including Risk Assessment);
(5) FS Reports;
(6) Proposed Plans;
(7) Records of Decision (RODs);
(8) Remedial Design Work Plans;
(9) Final Remedial Design;

(10) Remedial Action Work Plan and Schedules for Remedial Actions;
(11) Construction Quality Assurance Plan;
(12) Construction Quality Control Plan;
(13) Contingency Plan;
(14) Project Closeout Report; and an
(15) Operation and Maintenance Plan.

The Parties may agree to merge or combine multiple documents whenever appropriate and, if so, shall adjust deadlines accordingly.

b. Only draft final primary documents shall be subject to dispute resolution. NASA shall complete and transmit draft primary documents in accordance with the timetable and deadlines established in Section 8 (Deadlines) of this Agreement.

c. Primary documents may include target dates for subtasks established as provided in Subsections 7.4b and 18.3. The purpose of target dates is to assist NASA in meeting deadlines, but target dates do not become enforceable by their inclusion in the primary documents and are not subject to Section 8 (Deadlines), Section 9 (Extensions) or Section 13 (Enforceability).

7.4 Secondary Documents:

a. NASA shall complete and transmit drafts of the following secondary documents for each Operable Unit and for the final remedy to EPA, DTSC and the RWQCB for review and comment; provided, however, that NASA need not complete a draft secondary document for an Operable Unit if: (i) the same secondary document or primary document completed or to be completed with respect to another Operable Unit covers all topics relevant to the Operable Unit at issue; and (ii) the Parties agree in writing that such draft secondary document need not be completed. The following documents, when applicable, shall be secondary documents:

(1) Site Characterization Summaries (part of RI);
(2) Sampling and Data Results;
(3) Treatability Studies (only if generated);
(4) Underground Storage Tanks Report
(5) Initial Screenings of Alternatives;
(6) Risk Assessments;
(7) Well closure methods and procedures;
(8) Detailed analyses of Alternatives;
(9) Post-Screening Investigation Work Plans;

(10) Preliminary Review Report;
(11) Sampling Visit Work Plan;
(12) RCRA Facility Assessment Report;
(13) Preliminary Remedial Design;
(14) Construction Quality Assurance Plan;
(15) Construction Quality Control Plan;
(16) Contingency Plan;
(17) 10% Remedial Design;
(18) 30% Remedial Design; and a
(19) 90% Remedial Design.

b. Although EPA, DTSC and the RWQCB may comment on the drafts for the secondary documents identified above, such documents shall not be subject to dispute resolution except as provided by Subsection 7.2 hereof. Target dates for the completion and transmission of draft secondary documents may be established by the Project Managers. The Project Managers also may agree upon additional secondary documents that are within the scope of the listed primary documents.

7.5 Meetings of the Project Managers. (See also Subsection 18.3). The Project Managers shall meet in person approximately every ninety (90) days, except as otherwise agreed by the Parties, to review and discuss the progress of work being performed at the Site, including progress on the primary and secondary documents. However, progress meetings may be held more frequently as needed upon request by any Project Manager. Prior to preparing any draft document specified in Subsections 7.3 and 7.4, the Project Managers shall meet in an effort to reach a common understanding with respect to the contents of the draft document.

7.6 Identification and Determination of Potential ARARs:

a. The State lead agency will contact, in writing, those State and local governmental agencies that are a potential source of ARARs in a timely manner as set forth in NCP 300.515(d) and provide the names and addresses to NASA.

b. Prior to the issuance of a draft primary or secondary document for which ARAR determinations are appropriate, the Project Managers shall meet to identify and propose all potential pertinent ARARs, including any permitting requirements that may be a source of ARARs. At that time and within the time period described in NCP 300.515(h)(2), the State lead agency shall submit the proposed ARARs obtained pursuant to paragraph

7.6(a) to NASA, along with a list of agencies that failed to respond to the State's solicitation of ARARs and copies of the solicitations and any related correspondence.

c. NASA will contact the agencies that failed to respond and again solicit their inputs.

d. NASA will prepare draft ARAR determinations in accordance with CERCLA section 121(d)(2), 42 U.S.C. 9621(d)(2), the NCP and pertinent guidance issued by EPA.

e. In identifying potential ARARs, the Parties recognize that actual ARARs can be identified only on a site-specific basis and that ARARs depend on the specific hazardous substances, pollutants and contaminants at a site, the particular actions associated with a proposed remedy and the characteristics of a site. The Parties recognize that ARAR identification is necessarily an iterative process and that potential ARARs must be identified and discussed among the Parties as early as possible, and must be reexamined throughout the RI/FS process until a ROD is issued.

7.7 Review and Comment on Draft Documents:

a. NASA shall complete and transmit each draft primary document to EPA, DTSC and the RWQCB on or before the corresponding deadline established for the issuance of the document. NASA shall complete and transmit the draft secondary documents in accordance with the target dates established for the issuance of such documents.

b. EPA and the State shall review and comment on all draft documents within sixty (60) days. Timetables for review and comment on draft documents may include review periods of less than sixty (60) days if all Parties concur. At or before the close of the comment period, EPA and the State shall transmit their written comments to NASA. For unusually lengthy or complex documents, EPA or the State may extend the comment period for an additional thirty (30) days by written notice to NASA prior to the end of the review and comment period. In appropriate circumstances, this period may be further extended in accordance with Section 9 (Extensions).

c. Review of any document by the EPA, DTSC and the RWQCB may concern all aspects of it (including completeness) and should include, but is not limited to, technical evaluation of any aspect of the document, and consistency with CERCLA, the NCP,

applicable State law, and any pertinent guidance or other applicable federal law or policy issued by the EPA, DTSC or the RWQCB. At the request of the State and EPA Project Managers, and to expedite the review process, NASA shall make an oral presentation of the document to the Parties at the next scheduled meeting of the Project Managers following transmittal of the draft document or within fourteen (14) days following the request, unless the Parties agree to an alternative timeframe, whichever is sooner. Comments by EPA, DTSC and the RWQCB shall be provided with adequate specificity so that NASA may respond to comments and, if appropriate, make changes to the draft document. Comments shall refer to any pertinent sources of authority or references upon which the comments are based and, upon request of NASA, the EPA or State, as appropriate, shall provide a copy of the cited authority or reference.

d. Representatives of the Parties shall make themselves readily available during the comment period for purposes of informally responding to questions and comments on draft documents. Oral comments made during such discussions need not be the subject of a written response by NASA on the close of the comment period.

e. In commenting on a draft document which contains a proposed ARAR determination, EPA, DTSC or the RWQCB shall include a reasoned statement of whether it objects to any portion of the proposed ARAR determination. To the extent that EPA, DTSC or the RWQCB does object, the basis for the objection shall be explained in detail. In addition, any ARARs which are not identified properly in the proposed ARAR determination shall be addressed.

f. Following the close of the comment period for a draft document, NASA shall give full consideration to all written comments. Within fifteen (15) days following the close of the comment period on a draft secondary document or draft primary document the Parties shall hold a meeting to discuss all comments received. On a draft secondary document NASA shall, within sixty (60) days of the close of the comment period, transmit to the EPA, DTSC and the RWQCB its written response to the comments received. Time-tables for the response to comments on draft documents may be less than sixty (60) days if all Parties concur. On a draft primary document NASA shall transmit to EPA, DTSC and the RWQCB a draft final primary document, which shall include NASA's response to all written comments received within the comment period, within sixty (60) days or in the agreed upon time period for response to comments. While the resulting draft final document shall be the responsibility of NASA, it shall be the product of consensus to the maximum extent possible.

g. NASA may extend the sixty (60) day period, or other mutually agreed upon timeframe, for either responding to comments on a draft document or for issuing the draft final primary document for an additional thirty (30) days by providing written notice to EPA, DTSC and the RWQCB. In appropriate circumstances, this time period may be further extended in accordance with Section 9 (Extensions).

7.8 Availability of Dispute Resolution for Draft Final Primary Documents:

a. Dispute resolution procedures shall be available to the Parties for draft final primary documents as set forth in Section 12 (Dispute Resolution).

b. When dispute resolution procedures are invoked on a draft final primary document, work may be stopped in accordance with the procedures set forth in Subsection 12.9 regarding dispute resolution.

7.9 Finalization of Documents: The draft final primary document shall serve as the final primary document if no Party invokes dispute resolution regarding the document or, if invoked, at completion of the dispute resolution process should NASA's position be sustained. If NASA's determination is not sustained in the dispute resolution process, NASA shall prepare, within sixty (60) days of resolution of the dispute, a revision of the draft final document which conforms to the results of dispute resolution. In appropriate circumstances, the time period for this revision period may be extended in accordance with Section 9 (Extensions).

7.10 Subsequent Modification of Final Documents: Following finalization of any primary document other than the Community Relations Plan pursuant to Subsection 7.9, any Party may seek to modify the document including seeking additional field work, pilot studies, computer modeling or other supporting technical work, only as provided in subparagraphs (a) and (b) below. (These restrictions do not apply to the Community Relations Plan.)

a. Any Party may seek to modify a document after finalization by submitting a concise written request to the Project Managers of the other Parties. The request shall specify the nature of the requested modification and how the request is appropriate under subparagraphs 7.10b.1. and 2.

b. In the event that a consensus is not reached by the Project Managers on the need for a modification, any Party may invoke the dispute resolution procedures to determine if such modification shall be conducted. If the document did not require signature of the Parties, any modification will not require signature of the Parties. Modification of a document shall be required only upon a showing that:

(1) The requested modification is based on information that is: new (i.e., information that becomes available or known after the document was finalized); and significant; and
(2) The requested modification could be of significant assistance in evaluating impacts on the public health or the environment, in evaluating the selection of remedial alternatives, or in protecting human health and the environment.

c. Nothing in this Section shall alter EPA's, DTSC's or the RWQCB's ability to request the performance of additional work which was not contemplated by this Agreement. NASA's obligation to perform such work under this Agreement must be established by either a modification of a document or by an amendment to this Agreement.

8. DEADLINES

8.1 All deadlines agreed upon before the effective date of this Agreement shall be identified in Appendix A to this Agreement. To the extent that deadlines have already been mutually agreed upon by the Parties prior to the effective date of this Agreement, such deadlines will satisfy the requirements of this Section and remain in effect, shall be published in accordance with Subsection 8.2, and shall be incorporated into the appropriate work plans.

8.2 Within forty-five (45) days after the effective date of this Agreement, NASA shall propose, and announce and make available for public comment in the same manner as Section 36 specifies for this Agreement, proposed deadlines for completion of the following draft primary documents for each response action:

a. RI/FS Work Plans, including Sampling and Analysis Plans

b. Quality Assurance Project Plans (QAPPs)

c. Community Relations Plan

d. RI Reports

e. FS Reports

f. Proposed Plans

g. Records of Decision

Within sixty (60) days after EPA executes the Agreement, or the end of the public comment period on the Agreement, whichever is later, EPA and the State shall review and provide comments to NASA regarding the proposed deadlines. Within fifteen (15) days following receipt of the comments, NASA shall, as appropriate, make revisions and reissue the proposal. The Parties shall meet as necessary to discuss and finalize the proposed deadlines. All agreed upon deadlines shall be incorporated into the appropriate work plans. If the Parties fail to agree within thirty (30) days on the proposed deadlines, the matter shall immediately be submitted for dispute resolution pursuant to Section 12 (Dispute Resolution). The final deadlines established pursuant to this Subsection shall become an Appendix to this Agreement.

8.3 Within twenty-one (21) days of issuance of the Record of Decision (ROD) for any Operable Unit or for the final remedy, NASA shall propose deadlines for completion of the following draft primary documents:

a. Remedial Design Work Plan

b. Preliminary Remedial Design

c. Final Remedial Design

d. Remedial Action Plan (including plans and specifications for construction which incorporate operation and maintenance plans, and schedules for remedial action)

e. Construction Quality Assurance Plan

f. Construction Quality Control Plan

g. Contingency Plan

h. Project Closeout Report

These deadlines shall be proposed, finalized and published using the same procedures set forth in Subsection 8.2 of this Agreement.

8.4 For any Operable Units not identified as of the effective date of this Agreement, NASA shall propose deadlines for all documents listed in Subsection 7.3a(1) through (7) (with the exception of the Community Relations Plan) within twenty-one (21) days of agreement on the proposed Operable Unit by all Parties. These deadlines shall be proposed, finalized, and published using the same procedures set forth in Subsection 8.2.

8.5 The deadlines set forth in this Section, or to be established as set forth in this Section, may be extended pursuant to Section 9 (Extensions). The Parties recognize that one possible basis for extension of the deadlines for completion of the Remedial Investigation and Feasibility Study Reports is the identification of significant new Site conditions during the performance of the Remedial Investigation.

8.6 NASA shall maintain as part of this Agreement, subject to Section 38 (Appendices and Attachments), a list of deadlines, which shall be updated as deadlines are established or extended in accordance with the terms and conditions of the Agreement.

9. EXTENSIONS

9.1 Timetables, deadlines, and schedules, shall be extended if a Party submits a request for extension which the other Parties agree is timely and which demonstrates that good cause exists for the requested extension. Any request for extension by a Party shall be submitted to the other Parties in writing at least seven (7) days before the deadline from which an extension is sought and shall specify:

a. The timetable, deadline, or schedule that is sought to be extended;

b. The length of the extension sought;

c. The good cause(s) for the extension; and

d. The extent to which any related timetable and deadline or schedule would be affected if the extension were granted.

9.2 Good cause exists for an extension when sought in regard to:

a. An event of Force Majeure (see Section 10 (Force Majeure));

b. A delay caused by another Party's failure to meet any requirement of this Agreement;

c. A delay caused by the good faith invocation of dispute resolution or the initiation of judicial action;

d. A delay caused, or which is likely to be caused, by the grant of an extension in regard to another timetable and deadline or schedule;

e. A delay caused by public comment periods or hearings required under State law in connection with the State's performance of this Agreement;

f. Any work stoppage within the scope of Section 11 (Emergencies and Removals); or

g. Any other event or series of events mutually agreed to by the Parties as constituting good cause.

9.3 Absent agreement of the Parties with respect to the existence of good cause, a Party may seek and obtain a determination through the dispute resolution process that good cause exists.

9.4 Within seven (7) days of receipt of a request for an extension of a timetable, deadline, or schedule, each receiving Party shall advise the requesting Party in writing and by facsimile of the receiving Party's position on the request. Such notice shall be confirmed in writing and by facsimile within a reasonable time period. If a receiving Party does not concur in the requested extension, it shall include in its statement of nonconcurrence an explanation of the basis for its position.

9.5 If there is consensus among the Parties that the requested extension is warranted, NASA shall extend the affected timetable and deadline or schedule accordingly. If there is no consensus among the Parties as to whether all or part of the requested extension is warranted, the timetable and deadline or schedule shall not be extended except in accordance with a determination resulting from the dispute resolution process.

9.6 Within seven (7) days of receipt of a statement of non-concurrence with the requested extension, the requesting Party may invoke dispute resolution.

9.7 A timely and good faith request by NASA for an extension shall toll any assessment of stipulated penalties or application for judicial enforcement of the affected timetable and deadline or schedule until a decision is reached on whether the requested extension will be approved. If dispute resolution is invoked and the requested extension is denied, stipulated penalties may be assessed and may accrue from the date of the original timetable, deadline, or schedule. Following the grant of an extension, an assessment of stipulated penalties or an application for judicial enforcement may be sought only to compel compliance with the timetable and deadline or schedule as most recently extended.

10. FORCE MAJEURE

10.1 A Force Majeure shall mean any event arising from causes beyond the control of a Party that causes a delay in or prevents the performance of any obligation under this Agreement, including, but not limited to, acts of God; fire; war; insurrection; civil disturbance; explosion; unanticipated breakage or accident to machinery, equipment or lines of pipe despite reasonably diligent maintenance; adverse weather conditions that could not be reasonably anticipated; unusual delay in transportation; restraint by court order or order of public authority; inability to obtain, at reasonable cost and after exercise of reasonable diligence, any necessary authorizations, approvals, permits, or licenses due to action or inaction of any governmental agency or authority other than NASA; delays caused by compliance with applicable statutes or regulations governing contracting, procurement, or acquisition procedures, despite the exercise of reasonable diligence; and insufficient availability of appropriated funds which have been diligently sought. In order for Force Majeure based on insufficient funding to apply to

NASA, NASA shall have made a timely request for such funds as part of the budgetary process as set forth in Section 15 (Funding) and Congress shall have denied the request and/or the request shall have failed to be appropriated by law. A Force Majeure shall also include any strike or other labor dispute, whether or not within the control of the Parties affected thereby. Force Majeure shall not include increased costs or expenses of Response Actions, whether or not anticipated at the time such Response Actions were initiated. Upon request by either EPA, DTSC or the RWQCB, NASA shall provide a complete explanation of all efforts undertaken to avoid Force Majeure.

11. EMERGENCIES AND REMOVALS

11.1 Discovery and Notification: If any Party discovers or becomes aware of an emergency or other situation that may present an endangerment to public health, welfare, or the environment at or near the Site, which is related to or may affect the work performed under this Agreement, that Party shall immediately orally notify all other Parties, followed by written notification within seven (7) days. If the emergency arises from activities conducted pursuant to this Agreement, NASA shall then take immediate action to notify the appropriate State and local agencies and affected members of the public.

11.2 Work Stoppage: In the event any Party determines that activities conducted pursuant to this Agreement will cause or be threatened by a situation described in Subsection 11.1, the Party may propose the termination of such activities. If the Parties mutually agree, the activities shall be stopped for such period of time as required to abate the danger. In the absence of mutual agreement, the activities shall be stopped in accordance with the proposal, and the matter shall be immediately referred to the Federal Facilities Enforcement Section Chief for Superfund, Hazardous Waste Management Division, Region 9 EPA, for a work stoppage determination in accordance with Section 12.9.

11.3 Removal Actions:

a. The provisions of this Section shall apply to all removal actions as defined in CERCLA section 101(23), 42 U.S.C. section 9601(23), including all modifications to, or extensions of, the ongoing removal actions, and all new removal actions

proposed or commenced following the effective date of this Agreement.

b. Any removal actions conducted at the Site shall be conducted in a manner consistent with this Agreement, CERCLA, the NCP, and Executive Order 12580.

c. Nothing in this Agreement shall alter NASA's authority with respect to removal actions conducted pursuant to section 104 of CERCLA, 42 U.S.C. section 9604.

d. Nothing in this Agreement shall alter any authority EPA, DTSC or the RWQCB may have with respect to removal actions conducted at the Site.

e. All removal action documentation reviews conducted by EPA, DTSC and the RWQCB will be expedited so as to avoid jeopardizing the fiscal resources of NASA for funding the removal actions.

f. If a Party determines that there may be an endangerment to the public health or welfare or the environment because of an actual or threatened release of a hazardous substance, pollutant or contaminant at or from the Site, including but not limited to discovery of contamination of a drinking water well at concentrations that exceed any State or Federal drinking water action level or standards, the Party may request that NASA take such response actions as may be necessary to abate such danger or threat and to protect the public health or welfare or the environment. Such actions might include provision of alternative drinking water supplies or other response actions listed in CERCLA section 101(23) or (24), 42 U.S.C. section 9601(23) or (24), or such other relief as the public interest may require.

11.4 Notice and Opportunity to Comment:

a. NASA shall provide the other Parties with timely notice and opportunity to review and comment upon any proposed removal action for the Site. NASA agrees to provide the information described below pursuant to such obligation.

b. For emergency response actions, NASA shall provide EPA, DTSC and the RWQCB with notice in accordance with Subsection 11.1. Except in the case of extreme emergencies, such oral notification shall include: adequate information concerning the Site background; threat to the public health and welfare or the

environment (including the need for response); proposed actions and costs (including a comparison of possible alternatives, means of transportation of any hazardous substances off-site, and proposed manner of disposal); expected changes in the situation should no action be taken or should actions be delayed (including associated environmental impacts); any important policy issues; and NASA On-Scene Coordinator recommendations. Within forty-five (45) days of completion of the emergency action, NASA will furnish EPA, DTSC and the RWQCB with an Action Memorandum addressing the information provided in the oral notification, and any other information required pursuant to CERCLA and the NCP, and in accordance with pertinent EPA guidance, for such actions.

c. For other removal actions, NASA will provide EPA, DTSC and the RWQCB with any information required by CERCLA, the NCP, and in accordance with pertinent EPA guidance. Such information shall include the Action Memorandum, the Engineering Evaluation/Cost Analysis (in the case of non-time-critical removals) and, to the extent it is not otherwise included, all information required to be provided in accordance with paragraph b. of this Subsection. Such information shall be furnished at least forty-five (45) days before the response action is to begin.

d. All activities related to ongoing removal actions shall be reported by NASA in the progress reports as described in Section 18 (Project Managers).

11.5 Any dispute among the Parties as to whether a proposed response action is: (a) properly considered a removal action, as defined by CERCLA section 101(23), 42 U.S.C. section 9601(23); (b) consistent with the final remedial action; or (c) whether NASA will take a removal action requested by any Party pursuant to Subsection 11.3f above shall be resolved pursuant to Section 12 (Dispute Resolution). Such dispute may be brought directly to the Dispute Resolution Committee (DRC) at any Party's request.

11.6 The Parties shall first seek to resolve any dispute as to whether NASA will take a removal action requested by any other Party under Subsection 11.3f through the dispute resolution process contained in Section 12 (Dispute Resolution), but that process shall be modified for disputes on this specific subject matter in accordance with Subsection 12.11. EPA and the State reserve any and all rights each may have with regard to whether NASA will take a removal action requested by any Party pursuant

to Subsection 11.3f once the dispute resolution process specified in this Subsection is exhausted, and notwithstanding Section 31 (Covenant Not To Sue and Reservation of Rights).

12. DISPUTE RESOLUTION

12.1 Except as specifically set forth elsewhere in this Agreement, if a dispute arises under this Agreement, the procedures of this Section shall apply. Any Party may invoke this dispute resolution procedure. All Parties to this Agreement shall make reasonable efforts to resolve disputes informally at the Project Manager or immediate supervisor level. If resolution cannot be achieved informally, the procedures of this Section shall be implemented to resolve a dispute.

12.2 Within thirty (30) days after: (a) the receipt of a draft final primary document pursuant to Section 7 (Consultation); or (b) any action which leads to or generates a dispute; the disputing Party shall submit to the Dispute Resolution Committee (DRC) a written statement of dispute setting forth the nature of the dispute, the work affected by the dispute, the disputing Party's position with respect to the dispute and the technical, legal, or factual information the disputing Party is relying upon to support its position, and an explanation of all steps taken to resolve a dispute.

12.3 Prior to any Party's issuance of a written statement of a dispute, the disputing Party shall engage the other Parties in informal dispute resolution among the Project Managers and/or their immediate supervisors. During this informal dispute resolution period the Parties shall meet as many times as determined necessary to discuss and attempt resolution of the dispute.

12.4 The DRC will serve as a forum for resolution of disputes for which agreement has not been reached through informal dispute resolution. The Parties shall each designate one individual to serve on the DRC. The individuals designated to serve on the DRC shall be employed at the policy level Senior Executive Service (SES) or equivalent, or be delegated the authority to participate on the DRC for the purposes of dispute resolution under this Agreement. The EPA representative on the DRC is the Federal and Technical Programs Branch Chief for Superfund, Hazardous Waste

Management Division (HWMD), EPA Region 9. NASA's designated member is the Manager, Resident Office JPL . The DTSC representative is the Region 3 Site Mitigation Branch Chief. The RWQCB representative is the Assistant Executive Officer. Written notice of any delegation of authority from a Party's designated representative on the DRC shall be provided to all other Parties pursuant to the procedures of Section 21 (Notification).

12.5 Following elevation of a dispute to the DRC, the DRC shall have twenty-one (21) days to unanimously resolve the dispute and issue a written decision. If the DRC is unable unanimously to resolve the dispute within this twenty-one (21) day period, the written statement of dispute shall be forwarded to the Senior Executive Committee (SEC), by the Party originally submitting the Statement of Dispute, for resolution within seven (7) days after the close of the twenty-one (21) day resolution period. The twenty-one (21) day resolution period may be extended by written agreement of the DRC members.

12.6 The SEC will serve as the forum for resolution of disputes for which agreement has not been reached by the DRC. The EPA representative on the SEC is the Hazardous Waste Management Division Director, EPA Region 9. NASA's representative on the SEC is the Chief, Facilities Operations and Maintenance Office. DTSC's representative on the SEC is the Director of DTSC. RWQCB's representative on the SEC is the Executive Officer. The SEC members shall, as appropriate, confer, meet, and exert their best efforts to resolve the dispute and issue a written decision. If unanimous resolution of the dispute is not reached within twenty-one (21) days, the Hazardous Waste Management Divsion Director, EPA Region 9, shall issue a written position on the dispute. NASA or the State may, within fourteen (14) days of the HWMD Director's issuance of EPA's position, issue a written notice elevating the dispute to the EPA Regional Administrator for resolution in accordance with all applicable laws and procedures. In the event NASA or the State elects not to elevate the dispute to the Regional Administrator within the designated fourteen (14) day escalation period, NASA and the State shall be deemed to have agreed with the HWMD Director's written position with respect to the dispute.

12.7 Upon escalation of a dispute to the Regional Administrator of EPA pursuant to Subsection 12.6 above, the Regional Administrator will review and resolve the dispute within twenty-one (21) days. Upon request, and prior to resolving the dispute,

the EPA Regional Administrator shall meet and confer with the SEC to discuss the issue(s) under dispute. Upon resolution, the Regional Administrator shall provide the Parties with a written final decision setting forth resolution of the dispute. The duties of the Regional Administrator set forth in this Section shall not be delegated.

12.8 The pendency of any dispute under this Section shall not affect any Party's responsibility for timely performance of the work required by this Agreement, except as resolved through dispute resolution. All elements of the work required by this Agreement which are not affected by the dispute shall continue and be completed in accordance with the applicable timetable and deadline or schedule.

12.9 When dispute resolution is in progress, work affected by the dispute will immediately be discontinued if the Federal Facilities Enforcement Section Chief for Superfund, Hazardous Waste Management Division EPA Region 9 requests, in writing, that work related to the dispute be stopped because, in EPA's opinion, such work is inadequate or defective, and such inadequacy or defect is likely to yield an adverse effect on human health or the environment, or is likely to have a substantial adverse effect on the remedy selection or implementation process. The State may request the Federal Facilities Enforcement Section Chief for Superfund to order work stopped for the reasons set out above. To the extent possible, the Party seeking a work stoppage shall consult with the other Parties prior to initiating a work stoppage request. After work stoppage, if a Party believes that the work stoppage is inappropriate or may have potential significant adverse impacts, the Party may meet with the other Parties to discuss the work stoppage. Following this meeting, and further considerations of this issue, the Federal Facilities Enforcement Section Chief for Superfund will issue, in writing, a final decision with respect to the work stoppage. The final written decision of the Federal Facilities Enforcement Section Chief for Superfund may immediately be subject to formal dispute resolution. Such dispute may be brought directly to either the DRC or the SEC, at the discretion of the Party requesting dispute resolution.

12.10 Within twenty-one (21) days of resolution of a dispute pursuant to the procedures specified in this Section, NASA shall incorporate the resolution and final determination into the

appropriate plan, schedule, or procedures and proceed to implement this Agreement according to the amended plan, schedule, or procedures.

12.11 The following modified dispute resolution procedure shall apply only to disputes arising under Subsection 11.6, concerning a decision by NASA not to undertake a removal action as requested under Subsection 11.3f. This provision shall apply to such disputes in lieu of the procedures specified in Subsections 12.5, 12.6, and 12.7.

a. For purposes of this modified dispute resolution procedure, the EPA, State and NASA representatives on the Dispute Resolution Committee (DRC) and Senior Executive Committee (SEC) shall remain the same as in Subsections 12.4 and 12.6.

b. After submission of a Subsection 11.6 matter to dispute, as described in Subsection 12.2, the DRC shall handle the dispute under the procedure described in Subsection 12.5, except that the DRC shall have ten (10) days rather than twenty one (21) days to unanimously resolve the dispute, and shall forward an unresolved dispute to the SEC within four (4) days rather than seven (7) days. The Parties shall not extend the dispute resolution period.

c. If agreement is not reached by the DRC, the SEC members shall, as appropriate, confer, meet, and exert their best efforts to resolve the dispute and issue a written decision. If unanimous resolution of the dispute is not reached in seven (7) days, the NASA SEC member shall issue a written position on the dispute.

d. In the event EPA or the State does not concur with the NASA SEC member's proposed resolution of the dispute, EPA and the State retain any right each possessed with regard to the issue raised in the dispute under Subsection 11.6. Such nonconcurrence will be transmitted in writing to NASA's SEC member within seven (7) days of receipt of his/her issuance of the proposed resolution. Failure to transmit such nonconcurrence will be presumed to signify concurrence.

12.12 Subject to the terms of Subsections 11.6, 12.11 and 31.2, resolution of a dispute pursuant to this Section of the Agreement constitutes a final resolution of any dispute arising under this Agreement. All Parties shall abide by all terms and conditions of any final resolution of dispute obtained pursuant to this Section of this Agreement.

13. ENFORCEABILITY

13.1 The Parties agree that:

a. Upon the effective date of this Agreement, any standard, regulation, condition, requirement, or order which has become effective under CERCLA and is incorporated into this Agreement is enforceable by any person pursuant to CERCLA section 310, 42 U.S.C. section 9659, and any violation of such standard, regulation, condition, requirement, or order will be subject to civil penalties under CERCLA sections 310 and 109, 42 U.S.C. sections 9659 and 9609;

b. All timetables or deadlines associated with the RI/FS shall be enforceable by any person pursuant to CERCLA section 310, 42 U.S.C. section 9659, and any violation of such timetables or deadlines will be subject to civil penalties under CERCLA sections 310 and 109, 42 U.S.C. sections 9659 and 9609;

c. All terms and conditions of this Agreement which relate to remedial actions, including corresponding timetables, deadlines, or schedules, and all work associated with remedial actions, shall be enforceable by any person pursuant to CERCLA section 310, 42 U.S.C. section 9659, and any violation of such terms or conditions will be subject to civil penalties under CERCLA sections 310 and 109, 42 U.S.C. sections 9659 and 9609; and

d. Any final resolution of a dispute pursuant to Section 12 (Dispute Resolution) of this Agreement which establishes a term, standard, condition, timetable, deadline or schedule shall be enforceable by any person pursuant to CERCLA section 310, 42 U.S.C. section 9659, and any violation of such terms, standards, condition, timetable, deadline or schedule will be subject to civil penalties under CERCLA sections 310 and 109, 42 U.S.C. sections 9659 and 9609.

13.2 Nothing in this Agreement shall be construed as authorizing any person to seek judicial review of any action or work where review is barred by any provision of CERCLA including CERCLA section 113(h), 42 U.S.C. section 9613(h).

13.3 Nothing in this Agreement shall be construed as a restriction or waiver of any rights the EPA or the State may have under CERCLA and applicable State law, including but not limited

to any rights under sections 113, 121 and 310, 42 U.S.C. sections 9613, 9621 and 9659. NASA does not waive any rights it may have under CERCLA sections 120 and 121, 42 U.S.C. section 9620, 42 U.S.C. 1621, and Executive Order 12580.

13.4 The Parties agree to exhaust their rights under Section 12 (Dispute Resolution) prior to exercising any rights to judicial review that they may have.

13.5 The Parties agree that all Parties shall have the right to enforce the terms of this Agreement.

14. STIPULATED PENALTIES

14.1 In the event that NASA fails to submit a primary document referenced in Section 7 (Consultation) to EPA, DTSC and the RWQCB pursuant to the appropriate timetable or deadline established under Section 8 in accordance with the requirements of this Agreement, or fails to comply with a term or condition of this Agreement which relates to an Operable Unit or final remedial action, EPA may assess a stipulated penalty against NASA. DTSC and/or the RWQCB may also recommend to EPA that a stipulated penalty be assessed. A stipulated penalty may be assessed in an amount not to exceed $5,000 for the first week (or part thereof), and $10,000 for each additional week (or part thereof) for which a failure set forth in this Subsection occurs.

14.2 Upon determining that NASA has failed in a manner set forth in Subsection 14.1, EPA shall so notify NASA in writing. If the failure in question is not already subject to dispute resolution at the time such notice is received, NASA shall have fifteen (15) days after receipt of the notice to invoke dispute resolution on the question of whether the failure did in fact occur. NASA shall not be liable for the stipulated penalty assessed by EPA if the failure is determined, through the dispute resolution process, not to have occurred. No assessment of a stipulated penalty shall be final until the conclusion of a dispute resolution procedures related to the assessment of the stipulated penalty.

14.3 The annual reports required by CERCLA section 120(e)(5), 42 U.S.C. section 9620(e)(5), shall include, with respect to each

final assessment of a stipulated penalty against NASA under this Agreement, each of the following:

a. The federal facility responsible for the failure;

b. A statement of the facts and circumstances giving rise to the failure;

c. A statement of any administrative or other corrective action taken at the relevant Federal Facility, or a statement of why such measures were determined to be inappropriate;

d. A statement of any additional action taken by or at the federal facility to prevent recurrence of the same type of failure; and

e. The total dollar amount of the stipulated penalty assessed for the particular failure.

14.4 Stipulated penalties assessed pursuant to this Section shall be payable only in the manner and to the extent expressly provided for in acts authorizing funds for, and appropriations to, NASA. Stipulated penalties shall be payable to the EPA Hazardous Substance Response Trust Fund, subject to the following reservations. The State reserves the right to request the payment of one-half of such stipulated penalties to a fund designated by the State. NASA reserves the right to contest such request. No payment to the State shall be made except by consensus of the Parties, notwithstanding Section 12 of this Agreement (Dispute Resolution). In the event that future modifications in federal law alter the obligations of the Parties concerning payment of penalties to the State, the Parties shall meet in good faith to discuss amending or modifying this Subsection to be consistent with such modifications in federal law.

14.5 In no event shall this Section give rise to a stipulated penalty in excess of the amount set forth in CERCLA section 109, 42 U.S.C. section 9609.

14.6 This Section shall not affect NASA's ability to obtain an extension of a timetable, deadline, or schedule pursuant to Section 9 (Extensions).

14.7 Nothing in this Agreement shall be construed to render any member, employee, agent, or authorized representative of NASA personally liable for the payment of any stipulated penalty assessed pursuant to this Section.

15. FUNDING

15.1 It is the expectation of the Parties to this Agreement that all obligations of NASA arising under this Agreement will be fully funded. NASA agrees to seek sufficient funding through its budgetary process to fulfill its obligations under this Agreement.

15.2 In accordance with CERCLA section 120(e)(5)(B), 42 U.S.C. section 9620(e)(5)(B), NASA shall include, in its submission in the annual report to Congress, the specific cost estimates and budgetary proposals associated with the implementation of this Agreement.

15.3 Any requirement for the payment or obligation of funds, including stipulated penalties, by NASA established by the terms of this Agreement shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 U.S.C. section 1341. In cases where payment or obligation of funds would constitute a violation of the Anti-Deficiency Act, the dates established requiring the payment or obligation of such funds shall be appropriately adjusted.

15.4 If appropriated funds are not available to fulfill NASA's obligations under this Agreement, EPA and the State reserve the right to initiate an action against any other person, or to take any response action, which would be appropriate absent this Agreement.

16. EXEMPTIONS

16.1 The obligation of NASA to comply with the provisions of this Agreement may be relieved by:

a. An Order of exemption issued pursuant to the provisions of CERCLA section 120(j)(1), 42 U.S.C. section 9620(j)(1), or RCRA section 6001, 42 U.S.C. section 6961; or

b. The Order of an appropriate court.

16.2 The State reserves any statutory right it may have to challenge any Order relieving NASA of its obligations to comply with this Agreement.

17. STATUTORY COMPLIANCE/RCRA-CERCLA INTEGRATION

17.1 The Parties intend to integrate NASA's CERCLA response obligations and RCRA corrective action obligations which relate to the release(s) of hazardous substances, hazardous wastes, pollutants or contaminants covered by this Agreement into this comprehensive Agreement. Therefore, the Parties intend that activities covered by this Agreement will achieve compliance with CERCLA, 42 U.S.C. sections 9601 et seq.; to satisfy the corrective action requirements of RCRA sections 3004, 3005, and 9001 through 9010, 42 U.S.C. sections 6924, 6925, and 6991 through 6991i for a RCRA permit, and RCRA section 3008(h), 42 U.S.C. section 6928(h), for interim status facilities; and to meet or exceed all applicable or relevant and appropriate Federal and State laws and regulations, to the extent required by CERCLA section 121, 42 U.S.C. section 9621.

17.2 Based upon the foregoing, the Parties intend that any remedial action selected, implemented and completed under this Agreement will be protective of human health and the environment such that remediation of releases covered by this Agreement shall obviate the need for further corrective action under RCRA (i.e., no further corrective action shall be required). The Parties agree that with respect to releases of hazardous waste covered by this Agreement, RCRA shall be considered an applicable or relevant and appropriate requirement pursuant to CERCLA section 121, 42 U.S.C. section 9621.

17.3 The Parties recognize that the requirement to obtain permits for response actions undertaken pursuant to this Agreement shall be as provided for in CERCLA and the NCP. The Parties recognize that ongoing activities outside the scope of this Agreement at the Site may require the issuance of permits under Federal and State laws. This Agreement does not affect the requirements, if any, to obtain such permits. However, if a permit is issued to NASA for ongoing hazardous waste management activities at the Site, the issuing party shall reference and incorporate in a permit condition any appropriate provision, including appropriate schedules (and the provision for extension of such schedules), of this Agreement into such permit. The Parties intend that any judicial review of any permit condition which references this Agreement shall, to the extent authorized by law, only be reviewed under the provisions of CERCLA.

17.4 Underground Storage Tanks (USTs)

a. For the purposes of work performed under this Agreement, the definition of USTs is as follows: "Underground Storage Tanks" (USTs) as defined in 42 U.S.C. section 6991(1); and underground tanks which store "hazardous wastes", as defined in 42 U.S.C. section 6903(5).

b. The purpose of this Subsection is to coordinate UST site investigations and remediations with activities conducted under this Agreement.

c. Unless the Parties determine the UST work should be performed pursuant to Subsection 17.4d, such work will remain outside the scope of this Agreement. Such determinations shall be made as follows:

(1) The Parties will utilize the record search information as specified in Attachment D to determine which USTs will be handled pursuant to this Agreement, as provided in Subsection 17.4d.

(2) NASA shall investigate, take corrective action, and close USTs subject to the terms of this Agreement under Subsection 17.4d(1) through (3) through ongoing RI/FS and RD/RA activities. If the UST is leaking, NASA will remove the tank's contents to the extent necessary to prevent further release. If, as demonstrated by analytical data, the Parties agree that contamination from an UST, subject to the terms

of this Agreement, poses a substantial and immediate threat to human health and the environment, remediation or other response actions may be expedited through an appropriate CERCLA removal action option in accordance with Section 11 (Emergencies and Removals).

d. UST closures (as appropriate) and/or contamination from the USTs will be handled pursuant to the terms of this Agreement when any of the following occur:

(1) CERCLA hazardous substances have been released from USTs;

(2) Petroleum products have been released from USTs and have comingled with CERCLA hazardous substances; or

(3) Any UST remediation requiring free product removal or ground water treatment, where removal of such free product or ground water will create a hydraulic zone of influence that, based on analytical data, includes any portion of a CERCLA area of contamination.

e. For USTs not covered by the Agreement, where implementation of applicable Federal or State operational and/or corrective action requirements (including applicable Federal and State UST requirements) will have an adverse impact on CERCLA work, other than creating a hydraulic zone of influence, implementation of UST requirements will be carried out in conjunction with CERCLA activities conducted at the site to minimize any such adverse impacts. Adverse impacts include, but are not limited to, removal of USTs or soils where such removal would interfere with ongoing RI/FS operations or impede access to a CERCLA area of contamination.

f. Determinations under Section 17.4 will be subject to Section 12 (Dispute Resolution) of this Agreement.

18. PROJECT MANAGERS

18.1 On or before the effective date of this Agreement, EPA, DTSC, the RWQCB, and NASA shall each designate a Project Manager and an alternate (each hereinafter referred to as Project Manager), for the purpose of overseeing the implementation of

this Agreement. The Project Managers shall be responsible on a daily basis for assuring proper implementation of the RI/FS and the RD/RA in accordance with the terms of the Agreement. In addition to the formal notice provisions set forth in Section 21 (Notification), to the maximum extent possible, communications among EPA, DTSC, the RWQCB and NASA on all documents, including reports, comments, and other correspondence concerning the activities performed pursuant to this Agreement, shall be directed through the Project Managers.

18.2 EPA, DTSC, RWQCB, and NASA may change their respective Project Managers. The other Parties shall be notified in writing within five (5) days of the change.

18.3 The Project Managers shall meet to discuss progress as described in Subsection 7.5. Although NASA has ultimate responsibility for meeting its respective deadlines or schedule, the Project Managers shall assist in this effort by compressing the review of primary and secondary documents whenever possible, and by scheduling progress meetings to review reports, evaluate the performance of environmental monitoring at the Site, review RI/FS or RD/RA progress, discuss target dates for elements of the RI/FS to be conducted in the following one hundred and eighty (180) days, resolve disputes, and adjust deadlines or schedules. At least one week prior to each scheduled progress meeting, NASA will provide to the other Parties a draft agenda and summary of the status of the work subject to this Agreement. Unless the Project Managers agree otherwise, NASA shall prepare minutes of each progress meeting. These minutes, along with the meeting agenda and all documents discussed during the meeting (which were not previously provided) as attachments, shall constitute a progress report, which NASA shall send to all Project Managers within ten (10) business days after the meeting ends. If an extended period occurs between Project Manager progress meetings, the Project Managers may agree that NASA shall prepare an interim progress report and provide it to the other Parties. The report shall include the information that would normally be discussed in a progress meeting of the Project Managers. Other meetings shall be held more frequently upon request by any Project Manager.

18.4 The authority of the Project Managers shall include, but is not limited to:

a. Taking samples and ensuring that sampling and other field work is performed in accordance with the terms of any final work plan and QAPP;

b. Observing, and taking photographs and making such other reports on the progress of the work as the Project Managers deem appropriate, subject to the limitations set forth in Section 25 (Access to Federal Facility) hereof;

c. Reviewing records, files and documents relevant to the work performed;

d. Determining the form and specific content of the Project Manager meetings and of progress reports based on such meetings;

e. Recommending and requesting minor field modifications to the work to be performed pursuant to a final work plan, or in techniques, procedures, or design utilized in carrying out such work plan; and

f. The authority vested by the NCP, 40 CFR 300.120(b)(2), in NASA's RPM as On-Scene Coordinator and Remedial Project Manager, which will be exercised in consultation with the EPA and State RPMs and in accordance with the procedures specified in this Agreement.

18.5 Any minor field modification proposed by any Party pursuant to this Section must be approved orally by all Parties' Project Managers to be effective. NASA's Project Manager will make a contemporaneous record of such modification and approval in a written log, and a copy of the log entry will be provided as part of the next progress report. Even after approval of the proposed modification, no Project Manager will require implementation by a government contractor without approval of the appropriate Government Contracting Officer.

18.6 The Project Manager for NASA shall be responsible for day-to-day field activities at the Site. The NASA Project Manager or a designated employee of JPL shall be present at the Site or reasonably available to supervise work during all hours of work performed at the Site pursuant to this Agreement. For all times that such work is being performed, the NASA Project Manager shall inform the necessary persons at JPL of the name and telephone number of the designated employee responsible for supervising the work.

18.7 The Project Managers shall be reasonably available to consult on work performed pursuant to this Agreement and shall make themselves available to each other for the pendency of this

Agreement. The absence of EPA, DTSC, RWQCB, or the NASA Project Managers from the facility shall not be cause for work stoppage of activities taken under this Agreement.

19. PERMITS

19.1 The Parties recognize that under sections 121(d) and 121(e)(1) of CERCLA, 42 U.S.C. sections 9621(d) and 9621(e)(1), and the NCP, portions of the response actions called for by this Agreement and conducted entirely on-site are exempted from the procedural requirements to obtain a Federal, State, or local permit, but must satisfy all the applicable or relevant and appropriate Federal and State standards, requirements, criteria, or limitations which would have been included in any such permit.

19.2 This Section is not intended to relieve NASA from any and all regulatory requirements, including obtaining a permit, whenever it proposes a response action involving either the movement of hazardous substances, pollutants, or contaminants off-site, or the conduct of a response action off-site.

19.3 NASA shall notify EPA, DTSC and the RWQCB in writing of any permit required for off-site activities as soon as it becomes aware of the requirement. NASA agrees to obtain any permits necessary for the performance of any work under this Agreement. Upon request, NASA shall provide EPA, DTSC and the RWQCB copies of all such permit applications and other documents related to the permit process. Copies of permits obtained in implementing this Agreement shall be appended to the appropriate submittal or progress report. Upon request by the NASA Project Manager, the Project Managers of EPA, DTSC and the RWQCB will assist JPL to the extent feasible in obtaining any required permit.

20. QUALITY ASSURANCE

20.1 In order to provide quality assurance and maintain quality control regarding all field work and sample collection performed pursuant to this Agreement, NASA agrees to designate a Quality Assurance Officer (QAO) who will ensure and document that all work is performed in accordance with approved work plans, sampling plans and Quality Assurance Project Plans (QAPPs). The QAO shall maintain, for inspection, a log of quality assurance

field activities and the NASA Project Manager shall provide a copy to the Parties upon request.

20.2 To ensure compliance with the QAPP, NASA shall arrange for access, upon request by EPA or the State, to all laboratories performing analysis on behalf of NASA pursuant to this Agreement. Additionally, NASA agrees to utilize only those laboratories which have the appropriate California Hazardous Material Testing Laboratory Certifications for the analyses being performed.

21. NOTIFICATION

21.1 All Parties shall transmit primary and secondary documents, and comments thereon, and all notices required herein by next day mail, hand delivery, or facsimile. Time limitations shall commence upon receipt.

21.2 Notice to the individual Parties pursuant to this Agreement shall be sent to the addresses specified by the Parties. Initially these shall be as follows:

Michelle Schutz, Remedial Project Manager
U.S. Environmental Protection Agency, Region 9
Hazardous Waste Management Division, H-9-1
75 Hawthorne Street
San Francisco, CA 94105
(415) 744-2396; FAX (415) 744-1916

AND

Penny Nakashima, Remedial Project Manager
Department of Toxic Substances Control
1405 North San Fernando Blvd. Suite 300
Burbank, CA 91504
(818) 567-3067; FAX (818) 567-3129

AND

Dora S. Meyer, Contracting Officer
NASA Resident Office
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109-8099
(818) 354-6315; FAX (818) 354-6051

AND

Mr. Hank Yacoub
Los Angeles Regional Water Quality Control Board
101 Centre Plaza Drive
Monterey Park, CA 91754
(213)266-7522; FAX (213) 266-7600

21.3 All routine correspondence may be sent via first class mail to the above addressees.

22. DATA AND DOCUMENT AVAILABILITY

22.1 Upon request by any Party, each Party shall make the requested sampling results, test results or other data or documents generated through the implementation of this Agreement available to the other Parties. All requested quality assured data shall be supplied within sixty (60) days of its collection. If the quality assurance procedure is not completed within sixty (60) days, data or results without quality assurance shall be submitted within the sixty (60) day period and the requested quality assured data or results shall be submitted as soon as they become available. As soon as possible, but not later than sixty (60) days after the last sampling event of a group of samples, NASA shall, at a minimum, provide a quality assured data summary report citing all results which initially measure above detection. As soon as possible but not later than one hundred twenty (120) days after the last sampling event of a group of samples, NASA shall provide all requested quality assured data. If quality assurance procedures are not completed within the sixty (60) or one hundred twenty (120) day time frames, then reports without quality assurance shall be submitted within their respective time frames and quality assured data shall be submitted as soon as it becomes available. For the purpose of this paragraph, a "group of samples" is intended to mean: (1) an established round of quarterly or monthly samples collected from a specified network of locations; or (2) a discrete sampling episode.

22.2 The sampling Party's Project Manager shall notify the other Parties' Project Managers not less than ten (10) days in advance of any sample collection. If it is not possible to provide ten (10) days prior notification, the sampling Party's Project Manager shall notify the other Project Managers as soon as possible after becoming aware that samples will be collected.

Each Party shall allow, to the extent practicable, split or duplicate samples to be taken by the other Parties or their authorized representatives in accordance with final RI/FS Work Plans, QAPP and FSPs.

23. RELEASE OF RECORDS

23.1 The Parties may request of one another access to or a copy of any record or document relating to this Agreement. If the Party that is the subject of the request (the originating Party) has the record or document, that Party shall provide access to or a copy of the record or document; provided, however, that no access to or copies of records or documents need be provided if they are subject to claims of attorney-client privilege, attorney work product, deliberative process, enforcement confidentiality, or are properly classified for national security under law or executive order, or if their release is otherwise prohibited under Federal law.

23.2 Records or documents identified by the originating Party as confidential pursuant to other non-disclosure provisions of the Freedom of Information Act, 5 U.S.C. section 552, or pursuant to State law, shall be released to the requesting Party, provided the requesting Party states in writing that it will not release the record or document to the public without prior approval of the originating Party or after opportunity to consult and, if necessary, contest any preliminary decision to release a document, in accordance with applicable statutes and regulations. Records or documents which are provided to the requesting Party and which are not identified as confidential may be made available to the public without further notice to the originating Party.

23.3 The Parties will not assert any of the above exemptions, including those available under the Freedom of Information Act, even if available, if no governmental interest would be jeopardized by access or release as determined solely by that Party.

23.4 Subject to section 120(j)(2) of CERCLA, 42 U.S.C. section 9620(j)(2), any documents required to be provided by Section 7 (Consultation), and analytical data showing test results will always be releasable and no exemption shall be asserted by any Party.

23.5 This Section does not change any requirement regarding press releases in Section 26 (Public Participation and Community Relations).

23.6 A determination not to release a document for one of the reasons specified above shall not be subject to Section 12 (Dispute Resolution). Any Party objecting to another Party's determination may pursue the objection through the determining Party's appeal procedures.

24. PRESERVATION OF RECORDS

24.1 Despite any document retention policy to the contrary, the Parties shall preserve, during the pendency of this Agreement and for a minimum of ten (10) years after its termination, all records and documents contained in the Administrative Record and any additional records and documents retained in the ordinary course of business which relate to the actions carried out pursuant to this Agreement. After this ten (10) year period, each Party shall notify the other Parties at least forty-five (45) days prior to destruction of any such documents. Upon request by any Party, the requested Party shall make available such records or copies of any such records, unless withholding is authorized and determined appropriate by law.

25. ACCESS TO THE FEDERAL FACILITY

25.1 Without limitations on any authority conferred on EPA, DTSC or the RWQCB by statute or regulation, EPA, DTSC or the RWQCB or their authorized representatives shall be allowed to enter the Site at reasonable times for purposes consistent with the provisions of the Agreement, subject to any statutory and regulatory requirements necessary to protect national security. Such requirement shall not be applied so as to unreasonably hinder EPA or the State from carrying out their responsibilities and authority pursuant to this Agreement. Such access shall include, but not be limited to, reviewing the progress of NASA in carrying out the terms of this Agreement; ascertaining that the work performed pursuant to this Agreement is in accordance with approved work plans, sampling plans and QAPPs; and conducting such tests as EPA, DTSC, RWQCB, or the Project Managers deem necessary.

25.2 NASA shall honor all reasonable requests for access by the EPA, DTSC, or the RWQCB conditioned upon presentation of proper credentials. The NASA Project Manager will provide briefing information, coordinate access and escort to restricted or controlled-access areas, arrange for facility passes and coordinate any other access requests which arise.

25.3 EPA, DTSC and the RWQCB shall provide reasonable notice to the NASA Project Manager to request any necessary escorts. EPA, DTSC and the RWQCB shall not use any camera, sound recording or other recording device at the Site without the permission of the NASA Project Manager. NASA shall not unreasonably withhold such permission.

25.4 In the event that access requested by either EPA, DTSC or the RWQCB is denied by NASA, NASA shall provide an explanation within 48 hours of the reason for the denial, including reference to the applicable regulations, and, upon request, a copy of such regulations. NASA shall expeditiously make alternative arrangements for accommodating the requested access. The Parties agree that this Agreement is subject to CERCLA section 120(j)(2), 42 U.S.C. section 9620(j)(2), regarding the handling of restricted data.

25.5 If EPA, DTSC or the RWQCB requests access in order to observe a sampling event or other work being conducted pursuant to this Agreement, and access is denied or limited, NASA agrees to reschedule or postpone such sampling or work if EPA, DTSC or the RWQCB so requests, until such mutually agreeable time when the requested access is allowed. NASA shall not restrict the access rights of the EPA, DTSC or the RWQCB to any greater extent than NASA restricts the access rights of its contractors performing work pursuant to this Agreement.

25.6 All Parties with access to JPL pursuant to this Section shall comply with all applicable health and safety plans.

25.7 To the extent the activities pursuant to this Agreement must be carried out on other than NASA's property, NASA shall use its best efforts, including its authority under CERCLA section 104, 42 U.S.C. section 9604, to obtain access agreements from the owners which shall provide reasonable access for NASA, EPA, the RWQCB, and DTSC and their representatives. NASA may request the assistance of DTSC and the RWQCB in obtaining such access, and

upon such request, DTSC and the RWQCB will use its best efforts to obtain the required access. In the event that NASA is unable to obtain such access agreements, NASA shall promptly notify EPA, the RWQCB, and DTSC.

25.8 With respect to non-NASA property on which monitoring wells, pumping wells, or other response actions are to be located, NASA shall use its best efforts to ensure that any access agreements shall provide for the continued right of entry for all Parties for the performance of such remedial activities. In addition, any access agreement shall provide that no conveyance to a Non-Party of title, easement, or other interest in the property shall be consummated without the continued right of entry of the Parties.

25.9 Nothing in this Section shall be construed to limit EPA's, RWQCB's, and DTSC's full right of access as provided in section 104(e) of CERCLA, 42 U.S.C. section 9604(e), except as that right may be limited by section 120(j)(2) of CERCLA, 42 U.S.C. section 9620(j)(2), Executive Order 12580, or other applicable national security regulations or federal law.

26. PUBLIC PARTICIPATION AND COMMUNITY RELATIONS

26.1 The Parties agree that any proposed removal actions and remedial action alternative(s) and plan(s) for remedial action at the Site arising out of this Agreement shall comply with the administrative record and public participation requirements of CERCLA sections 113(k) and 117, 42 U.S.C. sections 9613(k) and 9617, relevant community relations provisions in the NCP, EPA guidance, and, to the extent they may apply, State statutes and regulations. The State agrees to inform NASA of all State requirements which it believes pertain to public participation. The provisions of this Section shall be carried out in a manner consistent with, and shall fulfill the intent of, Section 17 of the Agreement (Statutory Compliance - RCRA/CERCLA Integration).

26.2 NASA shall develop and implement a Community Relations Plan (CRP) addressing the environmental activities and elements of work undertaken by NASA.

26.3 NASA shall establish and maintain an administrative record at a place, at or near the Federal Facility, which is freely accessible to the public, which record shall provide the documentation supporting the selection of each response action. The administrative record shall be established and maintained in accordance with relevant provisions in CERCLA, the NCP, and EPA guidance. A copy of each document placed in the administrative record, will be provided by NASA to the other Parties. The administrative record developed by NASA shall be updated and new documents supplied to the other Parties on at least a quarterly basis. An index of documents in the administrative record will accompany each update of the administrative record.

26.4 Except in case of an emergency, any Party issuing a press release with reference to any of the work required by this Agreement shall advise the other Parties of such press release and the contents thereof, at least forty-eight (48) hours prior to issuance.

27. FIVE YEAR REVIEW

27.1 Consistent with section 121(c) of CERCLA, 42 U.S.C. section 9621(c), and in accordance with this Agreement, if the selected remedial action results in any hazardous substances, pollutants or contaminants remaining at the Site, the Parties shall review the remedial action program at least every five (5) years after the initiation of the final remedial action to assure that human health and the environment are being protected by the remedial action being implemented.

27.2 If, upon such review, any of the Parties propose additional work or modification of work, such proposals shall be handled under Subsection 7.10 of this Agreement.

27.3 To synchronize the five-year reviews for all Operable Units and final remedial actions, the following procedure will be used: Review of Operable Units will be conducted every five years counting from the initiation of the first Operable Unit, until initiation of the final remedial action for the Site. At that time a separate review for all Operable Units shall be conducted. Review of the final remedial action (including all Operable Units) shall be conducted every five years thereafter.

28. TRANSFER OF REAL PROPERTY

28.1 NASA shall retain liability in accordance with CERCLA notwithstanding any change in ownership or possession of the property interests comprising the Federal Facility. NASA shall not transfer any of the property interests comprising the Federal Facility except in compliance with Section 120(h)(3) of CERCLA, 42 U.S.C Section 9620(h)(3), in the case of transfers by deed, and Section 120(h)(1) of CERCLA, 42 U.S.C. section 9620(h)(1), in the case of transfers not by deed.

28.2 Prior to any transfer (whether or not it is conveyed by deed) of any portion of the property comprising the Federal Facility where any release of hazardous substances has come to be located and meets the threshold requirements stated in regulations promulgated pursuant to CERCLA Section 120(h)(2), or which is necessary for investigation or the performance of response action under this Agreement, NASA will:

a. Provide written notice to the transferee (including lessee, sublessee or other recipient) of the investigation and cleanup effort that NASA is engaged in at JPL, of the existence of this Agreement, and of the availability of the administrative record file;

b. Use its best efforts to give all of the Parties at least thirty (30) days notice of such transfer, of any provisions made for continued implementation of this Agreement (including, but not limited to, any additional response actions if required), and of how the property is to be used after the transfer is complete;

c. Use its best efforts to give all of the Parties notice of any activity by any subsequent transferee that may affect the RI/FS or any response action.

28.3 Prior to any transfer, NASA agrees to provide for the following to be included in documents evidencing such transfers:

a. That the Parties to this Agreement have continuous rights of access to and over such property, in accordance with Section 25;

b. That non-deed transferees will not make subsequent transfers without the approval of NASA;

c. That such transferee will not impede activities associated with the RI/FS or any response action taken under this agreement; and

d. That such a transfer will not alter the rights and obligations of the Parties under this Agreement.

28.4 a. NASA will use its best efforts to give all Parties at least thirty (30) days notice of a non-deed transfer and all subsequent non-deed transfers.

b. NASA will provide copies of documents evidencing all transfers to each of the Parties to this Agreement by certified mail within fourteen (14) days after the effective date of such a transfer.

29. AMENDMENT OR MODIFICATION OF AGREEMENT

29.1 This Agreement can be amended or modified solely upon written consent of all Parties. Such amendments or modifications may be proposed by any Party and shall be effective the third business day following the day the last Party signs the amendment or modification and sends its notification of signing to the other Parties. The Parties may agree to a different effective date. In the event that a document did not require signature of the Parties, any modification to that document will not require signature of the Parties.

30. TERMINATION OF THE AGREEMENT

30.1 The provisions of this Agreement shall be deemed satisfied and terminated upon receipt by NASA of written notice from EPA, with concurrence of DTSC and the RWQCB, that NASA has demonstrated that all the terms of this Agreement have been completed. If EPA denies or otherwise fails to grant a termination notice within ninety (90) days of receiving a written request from NASA for such notice, EPA shall provide a written statement of the basis for its denial and describe NASA actions which, in the view of EPA, would be a satisfactory basis for granting a notice of completion. Such denial shall be subject to dispute resolution.

30.2 This provision shall not affect the requirements for periodic review at maximum five (5) year intervals of the efficacy of the remedial actions.

31. COVENANT NOT TO SUE AND RESERVATION OF RIGHTS

31.1 In consideration for NASA's compliance with this Agreement, and based on the information known to the Parties or reasonably available on the effective date of this Agreement, EPA, DTSC, the RWQCB and NASA agree that compliance with this Agreement shall stand in lieu of any administrative, legal, and equitable remedies against NASA available to them regarding the releases or threatened releases of hazardous substances including hazardous wastes, pollutants or contaminants at the Site which are the subject of any RI/FS conducted pursuant to this Agreement and which have been or will be adequately addressed by the remedial actions provided for under this Agreement.

31.2 Notwithstanding any Provision of this Agreement, the State retains any statutory right it may have to obtain judicial review of any final decision of the EPA on selection of remedial action pursuant to any authority the State may have under CERCLA, including sections 121(e)(2), 121(f), 310 and 113, 42 U.S.C. sections 9621(e)(2), 9621(f), 9659 and 9613.

32. OTHER CLAIMS

32.1 Nothing in this Agreement shall constitute or be construed as a bar or release from any claim, cause of action or demand in law or equity by or against any person, firm, partnership or corporation not a signatory to this Agreement for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous substances, hazardous waste, pollutants, or contaminants found at, taken to, or taken from the Site. Unless specifically agreed to in writing by the Parties, EPA, DTSC and the RWQCB shall not be held as a party to any contract entered into by NASA to implement the requirements of this Agreement.

32.2 This agreement shall not restrict any Party from taking any legal or response action for any matter not part of the subject matter of this Agreement.

33. RECOVERY OF EPA EXPENSES

33.1 The Parties agree to amend this Agreement at a later date in accordance with any subsequent national resolution of the issue of cost reimbursement. Pending such resolution, EPA reserves any rights it may have with respect to cost reimbursement.

34. STATE SUPPORT SERVICES

34.1 NASA agrees to request funding and reimburse the State, subject to the conditions and limitations set forth in this Section, and subject to Section 15 (Funding), for all reasonable costs of response, as defined in CERCLA, that the State incurs in providing services in direct support of NASA's environmental restoration activities pursuant to this Agreement at the Site. As soon as practicable, but in no event later than ninety (90) days following the effective date of this Agreement, NASA and the State shall enter into a Memorandum of Agreement (MOA) addressing reimbursement of State costs, which shall incorporate the provisions sets forth in this Section.

34.2 Subject to Subsection 34.1 hereinabove, reimbursable expenses shall consist only of actual expenditures required to be made and actually made by the State in providing the following assistance to NASA:

a. Timely technical review and substantive comment on reports or studies which NASA prepares in support of its response actions and submits to the State;

b. Identification and explanation of State applicable or relevant and appropriate requirements (ARARs);

c. Field visits to ensure investigations and cleanup activities are implemented in accordance with applicable or relevant and appropriate State requirements, or in accordance with agreed upon conditions between the State and NASA that are established in the framework of this Agreement;

d. Support and assistance to NASA in the conduct of public participation activities in accordance with Federal and State requirements for public involvement;

e. Participation in the review and comment functions of a NASA (Technical Review Committee); and

f. Other services specified in this Agreement.

34.3 NASA shall not be responsible for reimbursing the State for any costs actually incurred in the implementation of this Agreement in excess of one percent (1%) of the NASA total lifetime project costs incurred through construction of the remedial action(s). Circumstances could arise whereby fluctuations in the NASA estimates or actual final costs through the construction of the final remedial action create a situation where the State receives reimbursement in excess of one percent of these costs. Under these circumstances, the State remains entitled to payment for services rendered prior to the completion of a new estimate if the services are within the ceiling applicable under the previous estimate.

a. Funding of support services must be constrained so as to avoid unnecessary diversion of NASA funds available for the overall cleanup; and

b. Support services should not be disproportionate to overall project costs and budget.

34.4 Either NASA or the State may request, on the basis of significant upward or downward revisions in NASA's estimate of its total lifetime costs through construction used in Subsection 34.3, a renegotiation of the cap. Failing an agreement, either NASA or the State may initiate dispute resolution in accordance with Subsection 34.6 below.

34.5 The State agrees to seek reimbursement for its expenses solely through the mechanisms established in this Section, and reimbursement provided for under this Section and the MOA shall be in settlement of any claims for State response costs relative to NASA's environmental restoration activities at the Site.

34.6 Unless or until superseded by a MOA pursuant to Subsection 34.1, and Section 12 (Dispute Resolution) notwithstanding, this Subsection shall govern any dispute between NASA and the State regarding the application of this Section or any matter controlled by this Section including, but not limited to, allowability of expenses and limits on reimbursement.

a. The NASA and State Project Managers shall be the initial points of contact for coordination of dispute resolution under this Subsection. Only the particular State agency having a dispute shall participate in the dispute resolution provided by the Subsection. Each State agency shall be represented by its own designees.

b. If the NASA and State Project Manager(s) are unable to resolve a dispute within a reasonable period of time, any Party may refer the dispute to the Chief of Environmental Management, NASA Headquarters, and the appropriate State DRC representative(s) identified in Subsection 12.4 hereinabove, as soon as practicable.

c. If the NASA Representative and the State DRC Representative(s) are unable to resolve the dispute within ten (10) working days, the matter shall be elevated to the appropriate State SEC representative(s), and the NASA SEC representative identified in Subsection 12.6 hereinabove.

d. In the event the appropriate State SEC representative(s) and the NASA SEC representative are unable to resolve a dispute within thirty (30) days, the State retains any legal and equitable remedies it may have to recover its expenses. In addition, the State may withdraw from this Agreement by giving sixty (60) days notice to the other Parties.

34.7 Nothing herein shall be construed to limit the ability of NASA to contract with the State for technical services that could otherwise be provided by a private contractor including, but not limited to:

a. Identification, investigation, and cleanup of any contamination beyond the boundaries of NASA JPL;

b. Laboratory analysis; or

c. Data collection for field studies.

34.8 Nothing in this Agreement shall be construed to constitute a waiver of any claims by the State for any expenses incurred prior to the effective date of this Agreement.

35. STATE PARTICIPATION CONTINGENCY

35.1 If DTSC and/or the RWQCB fail to sign this Agreement within thirty (30) days of notification of the signature by both EPA and NASA, this Agreement will be interpreted as if the non-signing agency was not a Party and any reference to such agency in this Agreement will have no effect. In addition, all other provisions of this Agreement notwithstanding, if the State does not sign this Agreement within the said thirty (30) days, NASA shall only have to comply with any State requirements, conditions, or standards, including those specifically listed in this Agreement, which NASA would otherwise have to comply with absent this Agreement.

35.2 In the event that DTSC and/or the RWQCB does not sign this Agreement:

a. NASA agrees to transmit all primary and secondary documents to DTSC and/or the RWQCB at the same time such documents are transmitted to EPA; and

b. EPA intends to consult with the State with respect to the above documents and during implementation of this Agreement.

36. EFFECTIVE DATE AND PUBLIC COMMENT

36.1 This Agreement is effective upon signature by all of the Parties to this Agreement.

36.2 The provisions of this Section shall be carried out in a manner consistent with, and shall fulfill the intent of Section 17 (Statutory Compliance/RCRA-CERCLA Integration).

36.3 Within fifteen (15) days after EPA, as the last signatory, executes this Agreement, NASA shall announce the availability of this Agreement to the public for a minimum forty-five (45) day period of review and comment, but ending no earlier than the date on which the comments from EPA and the State are due, under Section 8, on proposed deadlines. Publication shall include at least two major local newspapers of general circulation.

36.4 Promptly upon the completion of the comment period, NASA shall transmit to the other Parties copies of all comments received within the comment period. The Parties shall review all such comments and, within thirty (30) days after the close of the comment period, NASA shall prepare a written response to the public comments, for the review and concurrence of the other Parties. Within sixty (60) days after the close of the comment period, the Parties shall determine that either:

a. the Agreement shall remain effective in its present form; or

b. the Parties will seek to modify the Agreement pursuant to Section 29 (Amendment or Modification of Agreement), in response to the comments received. Absent or pending an amendment of the Agreement pursuant to Section 29, the Agreement will remain effective as originally executed.

36.5 Any response action underway upon the effective date of this Agreement shall be subject to the terms of this Agreement unless the Parties agree otherwise.

36.6 At the start of the public comment period, NASA will also transmit copies of this Agreement for review and comment to the Federal Natural Resource Trustees. The State will transmit copies to the appropriate State and local agencies and compile and consolidate comments from these agencies. The State will work with NASA prior to the start of the public comment period to develop the list of appropriate State and local agencies.

37. FACILITY CLOSURE

37.1 NASA does not currently plan to close the Jet Propulsion Laboratory in Pasadena, California. However, in the event that JPL is closed, such closure, except as is otherwise specifically provided by law, will not affect NASA's obligation to comply with the terms of this Agreement and to specifically ensure the following:

a. Continuing rights of access for EPA and the State in accordance with the terms and conditions of Section 25 (Access to the Federal Facility);

b. Availability of a Project Manager to fulfill the terms and conditions of the Agreement; and

c. Adequate resolution of any other problems identified by the Project Managers regarding the effect of facility closure on the implementation of this Agreement.

37.2 Facility closure will not of itself constitute a Force Majeure under Section 10 (Force Majeure), nor will it constitute good cause for extensions under Section 9 (Extensions), unless agreed by the Parties.

38. APPENDICES AND ATTACHMENTS

38.1 Appendices to this Agreement shall be an integral and enforceable part of the Agreement. They shall include the most current versions of:

a. Site-specific outline of key elements to be included in draft or draft final RI/FS Workplan;

38.2 Attachments shall be for information only and shall not be enforceable parts of this Agreement. The information in these attachments is provided to support the initial review and comment upon this Agreement, and they are only intended to reflect the conditions known at the signing of this Agreement. None of the facts related therein shall be considered admissions by, nor are they legally binding upon, any Party with respect to any claims unrelated to, or persons not a Party to, this Agreement. They shall include:

a. Statement of Facts;

b. Site map of JPL;

c. Chemicals of concern;

d. Removal actions proposed by NASA;

e. State Memorandum of Understanding.

39. COUNTERPARTS

39.1 This Federal Facility Agreement may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterparts shall together constitute one and the same document. Each undersigned representative of a Party certifies that he or she is fully authorized to enter into the terms and conditions of this Agreement and to legally bind such Party to this Agreement.

APPENDIX A

Topics to be addressed in the Remedial Investigation/Feasibility Study and related reports

The following are topics to be included at a minimum in the RI/FS Documents in Section 7.3(a)(1)-(5) and 7.4(a)(3), as set forth in the most recent version of the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (OSWER Directive 9355.3-01, Interim Final, October, 1988) and applicable State law. The documents shall also include additional topics and tasks, as appropriate, as set forth in the guidance.

Remedial Investigation and Feasibility Study Work Plan

1.0 Executive Summary
2.0 Introduction/Installation Description
  2.1 Facility Waste Generation and Manufacturing Process Description
3.0 Conceptual Site Model (Evaluation of existing data)
  3.1 Regional JPL Setting
    -- Meteorology
       Topography (significant features that would affect surface water migration)
    -- Geology (include description of confining layers)
    -- Hydrogeology (include description of preferred migration pathways)
    -- Potential Exposure Points or Receptors (Preliminary Human Health and Environmental Impacts)
    -- Potential Expedited Response Actions
  3.2 JPL Setting
    -- Meteorology
    -- Topography
    -- Geology
    -- Hydrogeology
    -- Areas of Concern
    -- Types and Volumes of Wastes Present (Suspected Sources)
    -- Potential Exposure Points/Receptors
    -- Potential Expedited Response Actions
    -- Preliminary Identification of Operable Units or Study Zones
    -- Preliminary Identification of Remedial Action Objectives/Remedial Action Alternatives

3.3 JPL Remedial Investigation Objectives (Data Gaps) for each Operable Unit or Study Zone
- -- Data Quality Objectives (Stage 1 and Stage 2)
- -- Site Characterization
- -- Baseline Risk Assessment
- -- Description of Sampling Strategy (Stage 3)

3.4 JPL Feasibility Study Objectives (Data Gaps) for each Operable Unit or Study Zone
- -- Treatability Study Needs
- -- Applicable or Relevant and Appropriate Requirements (ARARs)

3.5 Work Plan Rationale (Site Management Strategy)
- -- Description of phased approach
- -- Criteria for obtaining additional data
- -- Data Management
- -- Redefining Operable Units

4.0 RI/FS Tasks

4.1 As mentioned in the RI/FS guidance
-- To include revisions to Community Relations Plan

4.2 Modification of Work Plan

4.3 Agency Coordination/Notification
- -- ATSDR
- -- Natural Resource Trustees
- -- Others

5.0 Costs and Key Assumptions

6.0 Schedule (including Operable Units)

7.0 Project Management

QUALITY ASSURANCE PROJECT PLAN

Title Page
Table of Contents
1. Project Description
2. Project Organization and Responsibilities
3. QA Objectives for Measurement of Data
4. Sampling Procedures
5. Sample Custody
6. Calibration Procedures
7. Analytical Procedures
8. Data Reduction, Validation and Reporting
9. Internal Quality Control
10. Performance and Systems Audits
11. Preventative Maintenance
12. Data Assessment Procedures
13. Corrective Action
14. Quality Assurance Reports
15. Nonconformance and Corrective Action Procedures

FIELD SAMPLING PLANS

1. Site Background
2. Sampling Objectives
3. Sample Location and Frequency
4. Sample Designation
5. Sampling Equipment and Procedures
6. Sample Handling and Analysis

COMMUNITY RELATIONS PLAN

1. Overview and Objectives of Community Relations Plan
2. Capsule Site Description
3. Community Background
4. Public Meetings and Press Releases
5. Highlights of Program
6. Techniques and Timing Appendices
7. Contents of Administrative Record
8. Technical Review Committee

RI REPORT

Executive Summary

1. Introduction
   - 1.1 Purpose of Report
   - 1.2 Site Background
     - 1.2.1 Site Description
     - 1.2.2 Site History
     - 1.2.3 Previous Investigations
     - 1.2.4 Facility Waste Generation and Manufacturing Process Description
   - 1.3 Report Organization
2. Study Area Investigation
   - 2.1 Includes field activities associated with site characterization. These may include physical and chemical monitoring of some, but not necessarily all, of the following:
     - 2.1.2 Surface Features (topographic mapping, etc.) (natural and manmade features)
     - 2.1.3 Contaminant Source Investigations
     - 2.1.4 Locations and Characteristics of Solid Waste Management Units (SWMU) and Other Potential Areas of Concern
     - 2.1.5 Surface-water and Sediment Investigations
     - 2.1.6 Geologic Investigations
     - 2.1.7 Soil and Vadose Zone Investigations
     - 2.1.8 Ground Water Investigations

2.1.9 Human Population Surveys
2.1.10 Ecological Investigations
2.2 If technical memoranda documenting field activities were prepared, they may be included in an appendix and summarized in this chapter.

3. Physical Characteristics of the Study Area
3.1 Includes results of field activities to determine physical characteristics. These may include some, but not necessarily all, of the following:
3.1.1 Surface Features
3.1.2 Meteorology
3.1.3 Surface Water Hydrology
3.1.4 Geology
3.1.5 Soils
3.1.6 Hydrogeology
3.1.7 Demography and Land Use
3.1.8 Ecology
3.2 SWMU Information
3.2.1 Unit Characteristics

4. Nature and Extent of Contamination
4.1 Presents the results of site characterization, both natural chemical components and contaminants in the following:
4.1.1 Sources
4.1.1.1 SWMU Information
4.1.1.2 Waste Characteristics
4.1.1.3 Evidence of Release
4.1.1.4 Exposure Potential
4.1.2 Soils and Vadose Zone
4.1.3 Ground Water
4.1.4 Surface Water and Sediments
4.1.5 Air
4.1.6 Biota
4.1.7 Fish and Wildlife

5. Contaminant Fate and Transport
5.1 Potential Routes of Migration (i.e., air, ground water, etc.)
5.2 Contaminant Persistence
5.2.1 If they are applicable (i.e., for organic contaminants), describe estimated persistence in the study area environment and physical, chemical, and/or biological factors of importance for the media of interest.

- 5.3 Contaminant Migration
  - 5.3.1 Discuss factors affecting contaminant migration for the media of importance (e.g., sorption onto soils, solubility in water, movement of ground water, etc).
  - 5.3.2 Discuss modeling methods and results, if applicable.
- 6. Baseline Risk Assessment
  - 6.1 Human Health Evaluation
    - 6.1.1 Exposure Assessment
    - 6.1.2 Toxicity Assessment
    - 6.1.3 Risk Characterization
  - 6.2 Environmental Evaluation
- 7. Summary and Conclusions
  - 7.1 Summary
    - 7.1.1 Nature and Extent of Contamination
    - 7.1.2 Fate and Transport
    - 7.1.3 Risk Assessment
  - 7.2 Conclusions
    - 7.2.1 Data Limitations and Recommendations for Further Work
    - 7.2.3 Recommended Remedial Action Objectives

FS REPORT

Executive Summary

- 1. Introduction
  - 1.1 Purpose and Organization of Report
  - 1.2 Background Information (Summarized from RI)
    - 1.2.1 Site Description
    - 1.2.2 Site History
    - 1.2.3 Nature and Extent of Contamination
    - 1.2.4 Contaminant Fate and Transport
    - 1.2.5 Baseline Risk Assessment
- 2. Identification and Screening of Technologies
  - 2.1 Introduction
  - 2.2 Remedial Action Objectives - Presents the development of remedial action objectives for each medium of interest (ground water, soil, surface water, air, ecological, etc.). For each medium, the following should be discussed:
    - 2.2.1 Contaminants of Interest
    - 2.2.2 Allowable Exposure Based on Risk Assessment (Including ARARs)
    - 2.2.3 Development of Remediation Goals

2.3 General Response Actions - For each medium of interest, describes the estimation of areas or volumes to which treatment, containment, or disposal technologies may be applied.
2.4 Identification and Screening of Technology Types and Process Options - For each medium of interest, describes:
2.4.1 Identification and Screening of Technologies
2.4.2 Evaluation of Technologies and Selection of Representative Technologies

3. Development and Screening of Alternatives
3.1 Development of Alternatives - Describes rationale for combination of technologies/media into alternatives. Note: This discussion may be by medium or for the site as a whole.
3.2 Screening of Alternatives (if conducted)
3.2.1 Introduction
3.2.2 Alternative 1
3.2.2.1 Description
3.2.2.2 Evaluation of:
- Effectiveness
- Implementability
- Cost
3.2.3 Alternative 2
3.2.3.1 Description
3.2.3.2 Evaluation
3.2.4 Alternative 3

4. Detailed Analysis of Alternatives
4.1 Introduction
4.2 Individual Analysis of Alternatives
4.2.1 Alternative 1
4.2.1.1 Description
4.2.1.2 Assessment of:
- Overall Protection
- Compliance with ARARs
- Long-term Effectiveness and Permanence
- Reduction of Toxicity Mobility or Volume Through Treatment
- Short-Term Effectiveness
- Implementability
- Cost
- State Acceptance
- Community Acceptance

TREATABILITY INVESTIGATIONS

The need for treatability testing should be identified as early in the RI/FS process as possible. The purpose is to provide information needed for the detailed analysis of alternatives and to allow selection of a remedial action with a reasonable certainty of achieving the remedial action objectives. In general, treatability testing will include the following:

1. A work plan for Bench or Pilot Scale - see Chapter 5 of the Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA (October, 1988), for example work plan outlines;
2. Performing field sampling, and/or bench testing or pilot testing;
3. Evaluating data from field studies and/or bench or pilot testing; and
4. Preparing a brief report documenting the results of the testing.

ATTACHMENT A

STATEMENT OF FACTS

For the purposes of this Agreement, the following constitutes a summary of the facts upon which this Agreement is based. None of the facts related herein shall be considered admissions by any Party, nor shall they be used by any persons for purposes unrelated to this Agreement.

The Jet Propoulsion Laboratory (JPL) is a 176-acre research complex located on the border between northwestern Pasadena and La Canada Flintridge. The Facility is operated for the National Aeronautics and Space Administration (NASA) by the California Institute of Technology (Caltech). JPL is responsible for research and development in aeronautics, space technology, and space transportation, with a focus on the unmanned exploration of the solar system.

JPL's history began in 1936 when Professor Theodore von Karman and several graduate students of Caltech began rocket experiments in the Arroyo Seco creekbed in the foothills north of Pasadena. In 1945, JPL came under contract to the U.S. Army and remained under Army control until NASA took over in 1958. During the Army years, JPL developed the Corporal and Sergeant missile systems and also launched Explorer 1 - the first U.S. satellite - which discovered the Van Allen radiation belts surrounding the Earth.

In accordance with Section 120 of SARA, NASA JPL conducted a Preliminary Assessment (PA), a Site Inspection (SI), and an Expanded Site Inspection (ESI) to complete the investigations necessary for EPA to determine whether JPL would be added to the National Priorities List (NPL). During the PA/SI several areas of environmental concern were identified by JPL. They include 6 seepage pits; past spills near chemical storage building 187; and contamination of water wells approximately 1,000 feet down-gradient of the JPL site.

In November 1990, supplemental information to the ESI report was compiled. Through interviews with several long-term employees and retired JPL personnel, it was determined that of the 6 waste pits previously identified, only 2 of the pits were constructed solely for regular waste disposal; 2 of the pits were not "actually" pits, but were open areas where wastes may have been disposed; and the remaining 2 pits were apparently cesspool

seepage pits that had been abandoned. In addition, it was determined through these interviews that in the 1940's and 1950's, nearly every building at JPL used a cesspool to dispose of sanitary liquid and solid wastes. These cesspools were designed to allow liquid wastes to seep into surrounding soil, and have apparently been referred to as seepage pits in the past. Information gathered during the interviews indicated that most of the cesspool seepage pits at JPL probably received various quantities of chemical wastes since most of the buildings either stored or used various chemicals.

As a result of preliminary reviews of historical facility records on file at JPL, 27 cesspool seepage pits were identified. The older buildings where cesspools were used were located in the northeast section of JPL.

Additional information gathered during the interviews indicates that the cesspool seepage pits were approximately 4 to 5 feet in diameter and from 20 to possibly 40 feet deep. The walls of the pits were probably lined with unmortared bricks. It is believed that these pits were backfilled sometime between 1960 and 1963 when a sewer system was being installed at JPL. It appears that approximately one-quater to one-third of the identified pits may currently be covered by buildings. The remaining identified pits appear to be currently covered by roads, parking lots, flower beds, etc.

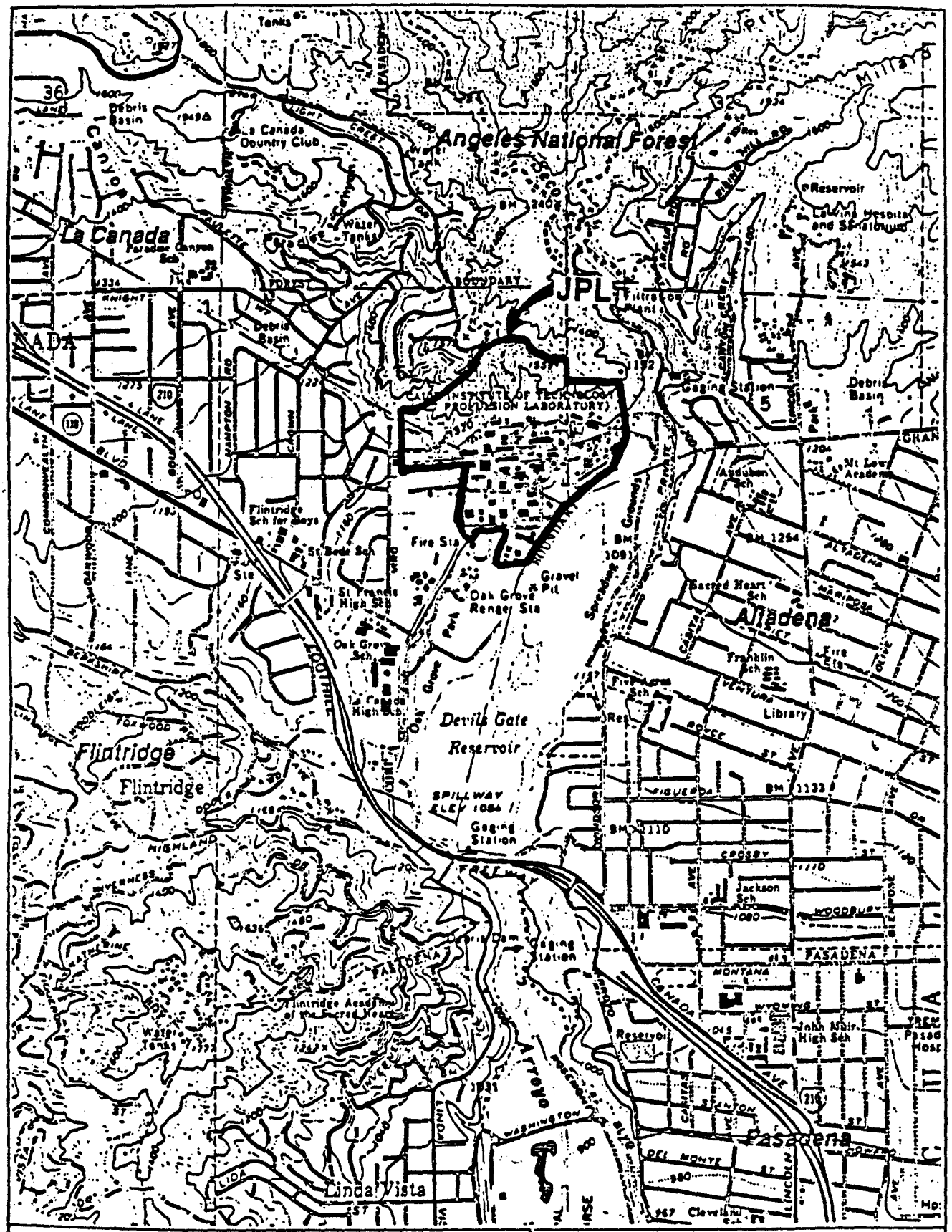
Areas of potential contamination identified at JPL are:

Soils at/near seepage cesspool areas;
Waste pits;
Ground water on and off-site.

JPL was placed on the National Priorities List on October 14, 1992, Federal Register, page 47180.

ATTACHMENT B

SITE MAPS



Source: U.S. Geological Survey
Pasadena Ca. Quadrangle (1966)
Scale: 1:24,000

N
W E
S

SITE LOCATION MAP
Jet Propulsion Laboratories

ATTACHMENT C

CHEMICALS OF CONCERN

Based on historical operations and previous sampling, the following chemicals of concern may be present in the environment at the Site in excess of recognized regulatory standards. The descriptions of toxicity of the chemicals at the Site is for reference only and should not be interpreted as describing absolute effects on any individual person. The list includes but may not encompass all chemicals of concern known at the time of this agreement. As the remedial investigation continues, the list may change.

ORGANIC CHEMICALS

Benzene
Bromodichloromethane
Carbon Tetrachloride
Chlorobenzene
Dichlorobromomethane
1,2-Dichloroethane
1,1-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
Ethylbenzene
Styrene
1,1,1-Trichloroethane
1,1,2-Trichloro-1,2,2-Trifluoroethane (Freon 113)
Tetrachloroethene (PCE)
Trichloroethene (TCE)
Trichlorofluoromethane (Freon 11)
Toluene
Total Trihalomethanes (includes chloroform, bromoform, dibromochloromethane, and dichlorobromomethane)
Xylenes

INORGANIC CHEMICALS

Cyanide
Nitrate (as N)
Nitrate (as NO2)

METALS

Antimony
Arsenic
Barium
Beryllium
Cadmium
Chromium (Total)
Cobalt
Copper
Lead
Molybdenum
Mercury
Nickel
Zinc
Stontium
Vanadium

ATTACHMENT D

UNDERGROUND STORAGE TANKS (USTs)

A. Procedures for Evaluating Adverse Impact on CERCLA Investigations and Response Actions

1. Record Search: NASA will submit the findings of a record search to the EPA and the State for all formerly and currently operating USTs known to exist at the effective date of this Agreement. This information will be presented in the Draft UST Report (a secondary document). Similar information will be presented for USTs discovered during the CERCLA process. This information will be transmitted by formal correspondence in accordance with applicable state and federal law. The following information will be submitted for each UST:

a. Location of all USTs including their associated piping, in relation to buildings, utility trenches, other facilities and waste management units;

b. Age and materials of construction of the tanks/ piping;

c. Size and dimensions of the tanks;

d. Contents of the tanks (past and present use); and

e. Inventory and release detection method records.

2. Inclusion Under the Federal Facility Agreement:

a. The Parties will utilize the record search information to determine which USTs will be handled pursuant to this Agreement, as provided in subsection 17.4(d).

b. For those USTs where available information is inconclusive regarding its eligibility for inclusion under this Agreement, a release detection investigation will be performed. The results of this investigation will be used to determine if the UST will be handled pursuant to this Agreement.

B. Investigation and Response Action

USTs determined to be subject to the terms of this Agreement under Subsection 17.4(d)(1) through (3) shall be investigated and closed through ongoing RI/FS and RD/RA activities. If the UST is determined to be leaking, the tanks' contents will be removed, to the extent necessary, to prevent further release. If, as demonstrated by analytical data, it is agreed by a majority of the Parties that contamination from a UST subject to terms of this Agreement poses a substantial and immediate threat to human health or the environment, remediation or other response action may be expedited through an appropriate CERCLA removal action option in accordance with Section 11 (Emergencies and Removals).

ATTACHMENT E

STATE MEMORANDUM OF UNDERSTANDING

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE DEPARTMENT OF HEALTH SERVICES
AND
THE STATE WATER RESOURCES CONTROL BOARD
THE REGIONAL WATER QUALITY CONTROL BOARDS
FOR THE CLEANUP OF HAZARDOUS WASTE SITES

August 1, 1990

INTRODUCTION

This Memorandum of Understanding (MOU) consists of general and specific provisions for the cleanup of hazardous waste sites. General provisions include the scope of the agreement, which defines the parties and the type of sites to which the MOU applies; the principles, not found in law or regulation, which govern the conduct of the parties; and the methods for implementation, which explain the manner by which the parties will execute, and perform according to, this MOU.

Specific provisions, which address the protocol the parties will follow for the cleanup of hazardous waste sites, include: the method by which the lead agency and, consequently, the support agency are determined; the responsibilities of the lead and support agencies, which are defined in terms of tasks to be accomplished; procedures to be followed to ensure coordination; outputs to be produced to ensure that minimum technical requirements are satisfied; the manner by which the parties will enforce their respective authorities and settle their claims against hazardous waste site owners, operators, or dischargers; and the manner by which the parties will settle their disputes.

BACKGROUND

Based on a recommendation of the Governor's Task Force on Toxics, Waste, and Technology, Governor Deukmejian issued Executive Order D-55-86, which states, in part, that the Department of Health Services (DHS), the State Water Resources Control Board (SWRCB), and the Regional Water Quality Control Boards (RWQCB) shall enter into an MOU that specifies each agency's responsibilities in hazardous waste site cleanup, defines standards and criteria for use in Remedial Action Plan (RAP) development, and identifies a conflict resolution process to resolve interagency disputes. Subsequently, the Legislature included a provision in the Supplemental Report of the 1988 Budget Act requiring the development of this MOU.

Statutes of the State of California, embodied in the state codes, authorize certain actions or express fundamental principles which must govern the intent and goals of the MOU. Relevant code sections include, but are not limited to, the following:

A. DHS is mandated to carry out all hazardous waste management responsibilities imposed or authorized by the Resources Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and any regulations promulgated pursuant to these federal acts (Health and Safety Code [HSC] 25159.7).

B. DHS shall prepare a plan for the expeditious implementation of the Hazardous Substance Cleanup Bond Act of 1984 which shall include procedures required for the development and adoption of final RAPs by DHS and RWQCB (HSC 25351.6 and 25334.5).

C. DHS, or if appropriate, the RWQCB shall prepare or approve RAPs for all sites listed by DHS for Remedial Action (RA) (HSC 25356.1 and 25356).

D. DHS or the RWQCB shall review and consider any public comments, revise the draft plan if appropriate, and then issue the final RAP. (HSC 25356).

E. DHS shall implement procedures for the abatement of an imminent and substantial endangerment (HSC 25358.3).

F. DHS is authorized to spend funds from the Hazardous Substance Account or the Hazardous Substance Cleanup Fund for removal or remedial actions on any site included on the list established pursuant to HSC 25356 only if DHS enters into an enforceable agreement or issues an order and determines in writing that the potential responsible party(s) is not in compliance with the order or agreement. (HSC 25355.5)

G. The SWRCB and each RWQCB shall be the principal state agencies with primary responsibility for the coordination and control of water quality (Water Code [WC] 13001).

H. Each RWQCB shall obtain coordinated action in water quality control, including the prevention and abatement of water pollution and nuisance (WC 13225).

Under direction from the Governor, DHS signed a Defense (Department)-State Memorandum of Agreement (DSMOA) in May 1990, which allows for funding state oversight of remedial actions at military facilities in California. Although both DHS and the State and Regional Boards are eligible to receive payment for their oversight costs, federal funding is limited and qualified. Separate agreements between DHS regional offices and the RWQCBs for specific sites will be required in order to allocate available funding. This MOU provides a basis for DHS and the Boards to agree on funding and performance at military facilities.

DHS, also, has recently signed an Agreement in Principle (AIP) with the U.S. Department of Energy (DOE). The AIP will provide reimbursement of state costs for oversight of specified environmental compliance activities at DOE facilities. An Interagency Agreement between the DHS Environmental Health Division and the SWRCB will specify water quality oversight tasks which the State and Regional Boards will perform.

THE DHS AND THE SWRCB AND THE RWQCBS AGREE TO THE FOLLOWING:

I. SCOPE

This MOU is effective immediately and is binding upon DHS, the SWRCB, and the nine RWQCBs. It covers the cleanup of hazardous substances at all sites or facilities where such substances must be cleaned up in order to protect public health or the environment. The cleanup of other substances is not covered under this agreement. Sites include, but are not limited to, sites listed on the National Priorities List (NPL) and in the DHS Site Mitigation annual work plan. This MOU shall be used to determine the relationship of the parties and to guide the site-specific communications between them on activities at the sites. The provisions of this MOU are applicable both at sites where a state agency is the lead agency as well as at sites where the U.S. Environmental Protection Agency, Region 9 (EPA) is the lead agency. In the latter case, the provisions of this MOU shall be utilized to determine which state agency will act as the liaison between the State and EPA and how the state agencies will coordinate their review and comment on site-specific documents submitted by EPA.

Contracts and agreements also exist which involve DHS, SWRCB, RWQCB, and local agencies in the cleanup of leaking underground storage tanks. There are also other specific agreements between state and/or federal agencies. This MOU is not intended to conflict with the provisions of those contracts and agreements nor is it intended to add procedure and requirements which the agencies agree are not necessary for the satisfactory cleanup of leaking underground storage tanks.

A Memorandum of Agreement (MOA) exists between DHS and the SWRCB regarding coordination of activities at facilities subject to regulation pursuant to RCRA. For coordination of cleanup activities at these facilities, the agencies should refer to both this MOU and the RCRA MOA.

II. PRINCIPLES

The parties recognize that certain principles, not found in law or regulation, should govern their conduct. One principle is that the participation of both agencies acting within their respective authorities, jurisdiction, and expertise, whether acting as lead agency or support agency, is essential for the successful cleanup of hazardous waste sites and is in the best interest of the State.

In the cleanup of hazardous waste sites, mutual trust, confidence, cooperation, and communication between the parties are to be expected. It is a basic aim of this MOU and the policy of the parties that duplication of effort in the site cleanup program be avoided. Public health and the environment are best served by each party minimizing duplication of effort on the greatest number of sites possible. Both parties do, however, recognize that there are certain situations where one or the other will have the necessary technical resources, expertise, or authority. To the extent staff and other resources allow, and in a manner set forth in this MOU, the parties agree to assist each other. This cooperative approach is in the best interest of public health and the environment.

Finally, the parties recognize that cleanup of hazardous waste sites throughout California can best be achieved if the state agencies act with consistency and predictability. Both the public and the responsible parties expect that state government will apply rational methodologies and standards to site cleanup. Compliance with the terms of this MOU will eliminate or significantly reduce any apparent inconsistencies between the agencies. Consistency will be achieved by agreement on minimum technical and procedural requirements, coordination of enforcement actions, close and constant communication between project staff, and exchange of Applicable or Relevant and Appropriate Requirements (ARARs) or state standards for site cleanup. If either agency is developing such standards, that agency will involve the other agency in the development at an early stage so that consistency in technical issues can be maintained.

III. IMPLEMENTATION

In order to facilitate implementation of this MOU, the parties will establish an "MOU Technical Advisory Committee" (TAC) within four months of the effective date of this MOU. The TAC will serve to provide guidance and advice to management and staff on technical issues that develop during performance under this agreement and will assist, if called upon, in the settlement of technical disputes. The TAC will also evaluate the achievement of the goals of the Executive Order and the compliance principles of this MOU and will provide an annual report to management. This report will be submitted by March 1 of each year, will cover the prior calendar year and will, if appropriate, include recommendations for modifications to this MOU to improve attainment of the principles of the parties. The TAC will consist of a total of six members, each at a level equivalent to Supervising Engineer, Supervising Hazardous Materials Specialist, or above, as follows: one member from DHS Headquarters, two members from DHS Regional Sections, one member from SWRCB, and two members from RWQCBs. Annually the TAC will elect one of its members as chairman who will be responsible for coordinating the activities of the TAC.

IV. LEAD AGENCY DETERMINATION

DHS Regional Offices and RWQCBs will meet to determine the lead agency as appropriate under this section.

A. The agency which first discovers a potential or actual hazardous waste site shall serve as the lead agency until the criteria of this MOU are utilized to determine a lead agency.

B. Within 180 days after the effective date of this MOU, the agencies shall determine the lead and support agencies for each hazardous waste site on which either agency plans to work in Fiscal Year 1990-91. Each Regional Board Executive Officer (EO) and Department Regional Administrator (RA) shall compile an inventory of hazardous waste sites within their respective regions and shall determine whether resources are or will be available to perform the tasks required by this MOU. The EO and RA shall then agree on which agency shall be lead and which shall be support for sites of common jurisdiction. Sites for which neither agency has resources shall be listed in a holding pool until resources become available or priorities change. This process shall be repeated for each subsequent fiscal year as necessary to implement this MOU. The designation of lead agency may be changed at any time by agreement of the agencies.

C. The determination of a lead agency shall be made by considering the factors listed in Paragraph D of this section. It is probable that more than one factor may be applicable to a site. In these situations, more weight should be given to those factors listed first.

D. The lead agency as between DHS and SWRCB/RWQCB, for the cleanup of hazardous waste sites shall be determined using the following guidance:

1. DHS should be the lead agency at sites where there is no responsible party.

2. If the site does not meet the criteria in number 1 above, then the following conditions apply:

   a. If after reasonable enforcement actions are implemented, the responsible party is unwilling or is financially unable to perform cleanup and the expenditure of state Superfund monies is deemed appropriate to perform actual site cleanup, then DHS should be the lead agency.

   b. If the site is on the NPL, then DHS should be the lead agency.

   c. If one agency has a significantly longer history of involvement working to clean up the site, then it should be the lead agency.

   d. If the source of the contamination is a leaking underground storage tank, then the RWQCB or a local agency, upon delegation by a Regional Board, or by contracting with the state Board, should be the lead agency.

   e. If the contamination is primarily airborne, then DHS should be the lead agency in consultation with the Air Resources Board and the appropriate Air Quality Management District.

   f. If the site is primarily a result of agricultural activities, then the RWQCB should be the lead agency.

   g. If the source of the contamination is an inactive mine, then the RWQCB should be the lead agency.

   h. If the contamination is confined to soils, then DHS should be the lead agency.

   i. If the contamination is primarily impacting surface waters, then the RWQCB should be the lead agency.

j. If the source of the contamination is a RCRA regulated disposal facility, then DHS should be the lead.

k. If the source of the contamination is a non-RCRA surface impoundment, then the RWQCB should be the lead agency.

l. If the source of the contamination is a landfill which would not normally be regulated by DHS, then the RWQCB should be the lead agency in consultation with the California Integrated Waste Management Board.

E. Notwithstanding a determination under Paragraph D of this section, DHS Regional Offices and the RWQCB may otherwise agree which agency shall be lead agency at a particular site. Specific examples of situations where this provision may be used are where multiple sources are contributing to the same problem or where resource availability affects the determination; however, other situations may warrant a decision using this provision.

F. The agency determined to be the lead agency for purposes of site cleanup under this MOU is not necessarily the lead agency for implementing programs or tasks that are applicable to the site but not within its authority or jurisdiction. Where the support agency happens to have sole or primary responsibility or exclusive capability for a program or task related to cleanup activities, then that agency shall perform those required tasks pursuant to its exclusive lead authority in a manner consistent with its role under this MOU. Examples of such tasks and programs include, but are not limited to, issuance of a National Pollutant Discharge Elimination System permit, approval of a transportation plan, regulation of nonhazardous wastes, enforcement of the Toxic Pits Control Act, approval of a solid waste water quality assessment test report, performance of a public health evaluation, or the imposition of restrictions for land use. The support agency will coordinate all activities described in this paragraph with the lead agency.

G. Any dispute regarding the determination of the lead agency shall be resolved pursuant to Section VII.

V. RESPONSIBILITIES OF LEAD AND SUPPORT AGENCIES

A. Coordination Procedures

1. General

a. The lead agency is responsible for coordinating and communicating with the support agency in a timely manner. This includes, but is not limited to, providing schedules, technical reports, correspondence, and enforcement papers; soliciting and responding to comment, analysis, evaluation, and advice; and meeting, conferring and discussing the project.

b. The support agency is responsible for coordinating and communicating with the lead agency in a timely manner. This includes, but is not limited to, providing notification that selected sites are of particular interest; providing comment, analysis, evaluation, and advice, especially that within the unique expertise of the agency; and meeting, conferring, and discussing the project.

c. EPA will be the lead agency for many sites listed on the NPL. The State will designate a state lead agency using the criteria specified in Section IV. The agency so designated has the responsibility of maintaining communications between the State and EPA. This agency does not have responsibility for ensuring completion of the tasks listed in Section V B. However, this agency shall ensure that comments from all state agencies

are transmitted to EPA and shall coordinate the resolution of any disputes so that the State presents only one position to EPA.

d. Neither agency will significantly change its procedures for the cleanup of hazardous substances without notification to and review and comment from the other agency. Examples of such changes include technical guidance documents and applicable regulations.

2. Specific

a. Each agency will coordinate with the other agencies on its enforcement activities as specified in Section VI.

b. The lead agency shall provide to the support agency any California Environmental Quality Act (CEQA) documents at least ten working days prior to sending these documents to the state clearinghouse. If the support agency decides to comment, it shall do so within ten working days after receipt, or during the formal review process as mandated by CEQA.

c. The lead agency shall contact the support agency to identify ARARs for each specific site at the following times:

(1) During the scoping phase of the remedial investigation/ feasibility study (RI/FS) or equivalent.

(2) During the site characterization phase of the RI or equivalent.

(3) During the development of alternatives in the FS or equivalent.

(4) During Remedial Design (RD).

The support agency shall respond within 30 calendar days after a request for ARARs. The lead agency shall apply the ARARs identified by the support agency or it shall provide to the support agency, at least 20 calendar days prior to informing the responsible party or the public, a written memorandum which identifies ARARs that will not be applied and the reasons for such decisions.

For those sites where EPA is the lead agency, the state lead agency as determined according to this MOU, shall notify EPA of all ARARs identified by the parties to this agreement. However, the party identifying the ARARs shall be responsible for defending the application of its ARARs should EPA elect not to apply them.

d. The lead agency shall prepare or have the responsible party(ies) prepare the draft RAP or equivalent cleanup plan as an internal working draft document and provide a copy to the support agency at least 20 working days prior to general public distribution. If the support agency decides to comment, it will do so within 20 working days after receipt. Unless a shorter period of time is mutually agreed upon, any dispute shall be resolved by Section VII.

e. The lead agency shall provide all other technical documents, as specified in Section V.B.9., and not otherwise referred to above, within a time sufficient for review and comment. In all cases, the lead agency shall provide at least 15 working days for review and response by a support agency unless a shorter period of time is mutually agreed upon. The support agency shall respond, as appropriate, in a timely manner.

B. Tasks

1. For sites listed on the NPL or in the DHS Site Mitigation annual work plan:

a. The lead agency shall be responsible for ensuring completion of the following tasks:

(1) Identifying imminent threats and initiate removal actions (if necessary).

(2) Identifying responsible parties.

(3) Issuing an order or entering into an enforceable agreement (if necessary).

(4) Coordinating enforcement actions (see Enforcement and Settlement Section VI).

(5) Establishing and maintaining an administrative record.

(6) Providing project oversight:

(i) Assigning a remedial project manager.

(ii) Maintaining a field presence including, if necessary, providing an on-scene coordinator.

(iii) Preparing and maintaining site schedules and workplans.

(iv) Reviewing technical documents listed in Section 9 of this paragraph for comment or approval.

(v) Managing applicable contracts.

(vi) Accounting for project costs.

(7) Preparing and/or reviewing RI/FS which includes:

(i) Site characterization.

(ii) RA alternatives.

(iii) Risk assessment.

(8) Requiring and approving the Quality Assurance Project Plan (QAPP) and Sampling and Analysis Plan (SAP).

(9) Providing technical documents to the support agency, including, but not limited to, as appropriate:

(i) Site schedule.

(ii) RI/FS workplan.

(iii) RI report.

(iv) FS report.

(v) Health and Safety Plan.

(vi) QAPP.

(vii) SAP.

(viii) Community relations plan.

(ix) RAP.

(x) CEQA documents.

(xi) Transportation plan.

(10) Maintaining community relations:

(i) Developing and implementing a community relations program.

(ii) Managing any technical assistance grants.

(11) Compiling ARARs.

(12) Conducting a complete Public Health Evaluation (PHE) (as appropriate).

(13) Preparing and approving the RAP.

(14) Preparing and/or approving RD/RA

(15) Complying with CEQA.

(16) Recovering cost (if necessary).

(17) Overseeing operations and maintenance, including long-term monitoring (if necessary).

(18) Restricting land use (as appropriate).

b. The support agency shall be responsible for reviewing and, if appropriate, providing comments on the documents listed in Section V.B.1.a.(9) within the time periods determined utilizing Section V.A.2. or the lead agency may assume that the support agency does not have any comments. Additionally, the support agency shall always respond to a request for ARARs, and shall perform tasks as appropriate according to its exclusive authority or capability.

2. For sites not listed on the NPL nor on the DHS Site Mitigation annual work plan:

a. The lead agency shall be responsible for ensuring completion of the following tasks:

(1) Conducting removal actions (if necessary).

(2) Identifying a responsible party.

(3) Coordinating enforcement action (see Enforcement and Settlement, Section VI).

(4) Establishing and maintaining an administrative record.

(5) Providing project oversight.

(i) Assigning a project manager.

(ii) Preparing and maintaining site schedules and workplans.

(iii) Reviewing technical documents.

(iv) Maintaining a field presence, as necessary.

(6) Preparing or approving an Employee Health and Safety Plan.

(7) Characterizing the nature and extent of the problem.

(8) Requiring and approving quality assurance and sampling plans.

(9) Evaluating cleanup alternatives.

(10) Complying with CEQA.

(11) Conducting community relations.

(12) Preparing or approving the cleanup plan.

(13) Overseeing cleanup.

(14) Providing technical reports to the support agency.

b. The support agency shall be responsible for reviewing and, if appropriate, providing written comments on the documents submitted pursuant to Section V.B.2.a within the time periods determined utilizing Section V.A.2. or the lead agency may assume that the support agency does not have any comments. Additionally, the support agency shall always respond to a request for ARARs, and shall perform tasks as appropriate according to its exclusive authority or capability.

C. Technical Requirements

1. The following outputs or items, in whole or in part, are required to be addressed for the completion of RAs at hazardous waste sites:

a. For sites Listed on the NPL or in the DHS Site Mitigation annual work plan:

(1) RAs (if needed).

(2) Identification of responsible parties.

(3) Enforceable agreement or order.

(4) Cooperative agreement.

(5) Administrative record.

(6) Remedial project manager.

(7) On-scene coordinator.

(8) Site schedule.

(9) Workplans.

(10) Community relations plan.

(11) QAPP.

(12) SAP.

(13) RI.

(i) Site history.

(ii) Identification of sources.

(iii) Site characterization.

(14) ARARs.

(15) FS.

(16) Record of decision (ROD)/RAP

(17) RD

(18) RA.

(19) PHE.

(20) CEQA document.

(21) Health and Safety Plan.

(22) Transportation plan (if needed).

b. For sites not listed on the NPL nor in the DHS Site Mitigation annual work plan:

(1) RAs.

(2) Identification of responsible parties.

(3) Administrative record.

(4) Remedial project manager.

(5) Site schedule.

(6) Workplan.

(7) Quality assurance plan.

(8) Sampling and analysis plan.

(9) RAP or cleanup plan.

(i) Site history.

(ii) Identification of sources.

(iii) Site characterization.

(iv) Feasible remedial alternative.

(v) RD.

(10) Community relations plan.

(11) RA.

(12) Employee Health and Safety Plan.

(13) Community Health and Safety Plan (if needed).

(14) CEQA compliance.

(15) Transportation plan (if needed).

2. The agencies shall define these requirements, as appropriate, according to 40 CFR 300 et seq., and HSC 25350 et seq., in addition to the guidance documents listed in Attachment A.

VI. ENFORCEMENT AND SETTLEMENT

A. For purposes of this MOU, enforcement means the action by an agency to compel performance by a responsible party, such as the issuance of an order or the filing of a complaint. Settlement means the resolution by agreement with the responsible party, in whole or in part, of matters in dispute, such as the performance required for satisfactory remedial action, claims for money, or liability.

B. The lead agency will communicate with the other agencies regarding its enforcement and settlement activities for hazardous waste sites. Communication means, for example, notification at least 10 working days in advance, if feasible, of a decision to issue an order or to initiate settlement negotiations; provision of enforcement or settlement documents for information or for review and comment; and, to the extent feasible, modification of a proposed order or agreement to incorporate the other agency's concerns. Staffs will meet and confer, as necessary, during drafting of enforcement and settlement documents.

C. Unnecessary or redundant enforcement documents are to be avoided. Neither agency will take enforcement actions that are not compatible or complementary to the enforcement actions of the other agencies. To the extent possible, consistent with preserving their respective authority or mandates, each agency will coordinate time schedules and demands so that responsible parties can respond to consistent direction.

D. To the extent practicable, each agency will assist the other in enforcement. Information that may be used to determine compliance or noncompliance will be transmitted to the enforcing agency as soon as possible but no later than 15 working days after being obtained and formalized.

E. Upon a determination of noncompliance with an administrative order and a decision to pursue litigation (i.e. , referral to the Attorney General or filing a complaint), the responsible agency will notify the other agencies at least seven working days prior to referring a matter to the Attorney General. Each agency will coordinate its legal actions to the extent practicable so that the Attorney General may bring joined or consolidated causes of action.

F. Negotiations may be commenced with a responsible party to enter into an enforceable agreement either to take cleanup action without the issuance of an order, to resolve noncompliance with an order that has been issued, or to resolve causes of action alleged in complaint. All decisions to negotiate with a responsible party will be coordinated between the agencies.

G. The lead agency will act as lead spokesperson for the negotiating team. The lead spokesperson will be responsible only for initiating and maintaining communications with the responsible parties, for coordinating the State's position, and for directing the agenda for settlement. The negotiating team will be composed of representatives from each agency with authority, with legitimate claims, and electing to participate. For purposes of dispute resolution in Federal Facility Agreements (FFAs), the lead agency and support agency may agree to designate which state agency will cast the State's vote.

Each agency is responsible for presenting its respective position. If an agency fails to attend negotiations or to meet other negotiating responsibilities without good cause, or without notifying the other participating agency in advance, then that agency must either defer to negotiating participants on issues discussed at the missed negotiation or withdraw from further negotiations relative to that particular site.

However, where practicable, in order to avoid unnecessary expenditure of resources for conducting negotiations, the support agency, after prior notification to and agreement by the lead agency, may elect to withdraw from or not participate in active negotiations, either temporarily or permanently. In such cases, the support agency is responsible for providing to the lead agency the details of their specific concerns regarding settlement. If this information is not provided, the lead agency will negotiate in the best interest of the State, but will have no responsibility to negotiate on behalf of the support agency issues for which the lead agency has neither authority nor assistance.

When the support agency does not attend negotiations, the lead agency is responsible for obtaining for the support agency terms of settlement identical to its own, provided that: the support agency provides the necessary information and assistance to the lead agency pursuant to this section; and the terms requested by the support agency are similar in scope and documentation to that of the lead agency ("identical terms" means similar percentage of settlement request or similar conditions as opposed to a dollar-for-dollar separation). Moreover, the lead agency is responsible for notifying the support agency if new issues arise which may be within the sole authority of the support agency, in order that the support agency has the opportunity to participate in those portions of the negotiations addressing such issues. The negotiation of FFAs with the federal government is an example of when this situation may occur. In this example, the lead agency will not settle for recovery of their costs without including those similarly justifiable costs of the support agency.

H. All communications with a responsible party related to negotiations will be coordinated by the lead spokesperson. Documents related to negotiations will be shared freely between the agencies and such documents which are confidential will be maintained in a manner consistent with any applicable requirements for confidentiality.

I. Each agency will support the other during negotiations. A single position is essential, and the agency advocating the most conservative or stringent position will be responsible for defending its position. A disagreeing agency will remain silent or request a recess. All agencies involved should meet prior to each negotiating session in order to minimize disagreements.

J. Before agreement or settlement with responsible parties can be reached, the concerns and claims of each agency regarding the issues to be agreed upon or settled will be resolved. An agency will not settle independently with responsible parties without advance concurrence by the other participating parties. Disputes shall be settled pursuant to the procedure described in Section VII.

K. Settlement with a responsible party will include provision for payment by the responsible party for all oversight costs incurred or to be incurred by any negotiating agency that will participate in the RA procedure.

VII. DISPUTE RESOLUTION

A. Disputes shall be resolved, if at all possible, through informal discussion, negotiation, and consensus. Such informal discussions may, if necessary, include staff at all levels, including those listed in Section VII.B.1. If the dispute cannot be resolved informally within a reasonable length of time or if continuing nonresolution of the dispute would place either party at a disadvantage, then either party may notify the other party that such a dispute exists and exercise the formal dispute resolution procedure described below.

B. Disputes shall be resolved formally using the following procedure:

1. Jointly the staffs of the agencies involved in the dispute shall prepare a memorandum describing the dispute. The lead agency shall provide copies to the appropriate RA of the Toxic Substances Control Program (TSCP) and to the Executive Officer (EO) of the appropriate Regional Board. The memorandum shall address and explain all sides to the dispute, shall state the consequences of each recommended decision and shall provide a date by which a decision is needed. The lead staff person for each agency shall co-sign the memorandum prior to submitting it to management.

2. If the DHS RA and the RWQCB EO cannot resolve the dispute within the time requested in the memorandum, then they will jointly present written notification of the dispute to both the Executive Director (ED) of the SWRCB and the Deputy Director of the TSCP.

3. If the SWRCB ED and the TSCP Deputy Director cannot resolve the dispute within 30 calendar days from the day the memorandum is delivered to them, then the memorandum shall be delivered to the SWRCB and the Director of DHS. If within 30 calendar days they cannot resolve the dispute, the memorandum shall be delivered to the Secretary of Environmental Affairs and to the Secretary of Health and Welfare. If within 30 calendar days they cannot resolve the dispute, the memorandum shall be delivered to the Governor.

4. When the dispute is resolved, a written decision shall be provided to all parties to this MOU.

C. During such time that any formal or informal dispute is not yet resolved, neither agency will comment adversely in public. The time required to resolve a dispute shall not be used to unnecessarily or unfairly delay action by either agency.

John J. Kearns
Acting Deputy Director
Toxic Substances Control Program
Department of Health Services
State of California

Date: 7/30/90

James W. Baetge
Executive Director
State Water Resources Control Board
State of California

Date: 7/31/90

ATTACHMENT A

APPLICABLE LAWS, REGULATIONS, AND GUIDANCE DOCUMENTS

A. California Water Code.

B. California Health and Safety Code.

C. Titles 22/23 (Subchapter 15) California Code of Regulations.

D. California Environmental Quality Act.

F. National Oil and Hazardous Substances Contingency Plan.

G. Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA.

H. Superfund Public Health Evaluation Manual.

I. Superfund Exposure Assessment Manual.

J. Methodology for Characterization of Uncertainty in Exposure Assessments.

K. RCRA Ground-Water Monitoring Technical Enforcement Guidance Document.

L. The Endangerment Assessment Handbook.

M. Superfund Remedial Design and Remedial Action Guidance.

N. Standard Operation Safety Guides (OSWER).

O. Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (DHS [NIOSH]).

P. Data Quality Objectives for Remedial Response Activities (OSWER).

Q. Samplers and Sampling Procedures for Hazardous Waste Sources (EPA).

R. A Compendium of Superfund Field Operations Methods.

S. Handbook on Remedial Action on Waste Disposal Sites.

T. Uncontrolled Hazardous Waste Site Ranking System–A User's Manual.

U. Community Relations in Superfund: A Handbook (EPA) 03/86.

V. The California Site Mitigation Decision Tree Manual.

W. Small Site Cleanup Guidance Document (to be completed).

X. Leaking Underground Fuel Tank Manual.

ATTACHMENT B

ACRONYMS USED IN THE MEMORANDUM OF UNDERSTANDING

1.	AIP	Agreement In Principle
2.	ARARS	Applicable or Relevant and Appropriate Requirements
3.	CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
4.	CEQA	California Environmental Quality Act
5.	DHS	Department of Health Services
6.	DOE	U.S. Department of Energy
7.	DSMOA	Defense (Department)-State Memorandum of Agreement
8.	ED	Executive Director
9.	EO	Executive Officer
10.	EPA	U.S. Environmental Protection Agency, Region 9
11.	FFA	Federal Facility Agreement
12.	FS	Feasibility Study
13.	HSC	Health and Safety Code
14.	MOA	Memorandum of Agreement
15	MOU	Memorandum of Understanding
16.	NPL	National Priorities List
17	PHE	Public Health Evaluation
18	QAPP	Quality Assurance Project Plan
19.	RA	Remedial Action or Regional Administrator
20.	RAP	Remedial Action Plan (State equivalent to ROD)
21.	RCRA	Resource Conservation and Recovery Act
22.	RD	Remedial Design
23.	RI	Remedial Investigation
24.	ROD	Record of Decision (Federal equivalent to RAP)
25.	RWQCB	Regional Water Quality Control Board

26.	SAP	Sampling and Analysis Plan
27	SWRCB	State Water Resources Control Board
28.	TAC	Technical Advisory Committee
29.	TSCP	Toxic Substances Control Program
30.	WC	Water Code

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NASA

12/2/92
DATE

FRED W. BOWEN
Manager NASA Resident Office

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

DATE

DANIEL W. MCGOVERN
Regional Administrator
U.S. Environmental Protection Agency
Region IX

CALIFORNIA STATE
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

DATE

STEPHEN LAVINGER
Branch Chief, Site Mitigation Branch
Department of Toxic Substances Control
Region 3

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

DATE

ROBERT P. GHIRELLI
Executive Officer
Regional Water Quality Control Board

NASA

_____
DATE

_____
FRED W. BOWEN
Manager NASA Resident Office

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

12.23.92
DATE

Daniel W. McGovern
DANIEL W. MCGOVERN
Regional Administrator
U.S. Environmental Protection Agency
Region IX

CALIFORNIA STATE DEPARTMENT OF TOXIC SUBSTANCES CONTROL

_____
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STEPHEN LAVINGER
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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

_____
DATE

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ROBERT P. GHIRELLI
Executive Officer
Regional Water Quality Control Board

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FRED W. BOWEN
Manager NASA Resident Office

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

DATE

DANIEL W. MCGOVERN
Regional Administrator
U.S. Environmental Protection Agency
Region IX

CALIFORNIA STATE
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

12/1/92
DATE

for STEPHEN LAVINGER
Branch Chief, Site Mitigation Branch
Department of Toxic Substances Control
Region 3

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

DATE

ROBERT P. GHIRELLI
Executive Officer
Regional Water Quality Control Board

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To MICHELLE SCHUTZ	From HANK H. YACOUB
Co. U.S. EPA	Co. CRWQCB
Dept.	Phone # (213) 266-7522
Fax # (415) 744-1916	Fax # (213) 266-7600

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FRED W. BOWEN
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UNITED STATES ENVIRONMENTAL
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DANIEL W. MCGOVERN
Regional Administrator
U.S. Environmental Protection Agency
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CALIFORNIA STATE
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

DATE

STEPHEN LAVINGER
Branch Chief, Site Mitigation Branch
Department of Toxic Substances Control
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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

8/2/92
DATE

Robert P. Ghirelli

ROBERT P. GHIRELLI
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Regional Water Quality Control Board