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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 9
AND THE
STATE OF CALIFORNIA
AND THE
UNITED STATES DEPARTMENT OF THE NAVY

IN THE MATTER OF:

The U.S. Department
of the Navy

Marine Corps Base
Camp Pendleton

Federal Facility
Agreement Under
CERCLA Section 120

Administrative
Docket Number: 91-3

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

TABLE OF CONTENTS

1. Purpose.....	3
2. Parties.....	4
3. Jurisdiction.....	5
4. Definitions.....	6
5. Determinations.....	9
6. Work to be Performed.....	10
7. Consultation: Review and Comment Process for Draft and Final Documents.....	11
8. Deadlines.....	17
9. Extensions.....	18
10. Force Majeure.....	20
11. Emergencies and Removals.....	21
12. Dispute Resolution.....	24
13. Enforceability.....	27
14. Stipulated Penalties.....	28
15. Funding.....	30
16. Exemptions.....	31
17. Statutory Compliance/RCRA-CERCLA Integration.....	31
18. Project Managers.....	32
19. Permits.....	35
20. Quality Assurance.....	35
21. Notification.....	36
22. Data and Document Availability.....	37
23. Release of Records.....	37
24. Preservation of Records.....	38
25. Access to Marine Corps Base Camp Pendleton.....	39
26. Public Participation and Community Relations.....	41
27. Five-Year Review.....	42
28. Transfer of Real Property.....	42
29. Amendment or Modification of Agreement.....	43
30. Termination of the Agreement.....	43
31. Covenant Not To Sue and Reservation of Rights.....	43
32. Other Claims.....	44
33. Recovery of EPA Expenses.....	44
34. State Support Services.....	44
35. State Participation Contingency.....	48
36. Effective Date and Public Comment.....	48
37. Base Closure	50
38. Appendices and Attachments.....	50

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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AND THE
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IN THE MATTER OF:)	Federal Facility
The U.S. Department)	Agreement Under
of the Navy)	CERCLA Section 120
Marine Corps Base)	Administrative
Camp Pendleton)	Docket Number:

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. PURPOSE

1.1 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 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/SARA, the NCP, Superfund guidance and policy, RCRA, RCRA guidance and policy, and applicable State law; and

(c) Facilitate cooperation, exchange of information and participation of the Parties in such action; and

(d) Ensure the adequate assessment of potential injury to natural resources and the prompt notification to and cooperation and coordination with the Federal and State Natural Resource Trustees necessary to ensure the implementation of response actions achieving appropriate cleanup levels.

1.2 Specifically, the purposes of this Agreement are to:

(a) Identify operable unit alternatives which are appropriate at the Site prior to the implementation of final

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

remedial action(s) for the Site. OU alternatives shall be identified to the Parties as early as possible prior to proposal of OUs to EPA and the State. This process is designed to promote cooperation among Parties in identifying OU alternatives prior to the final selection of Operable Units;

(b) Establish requirements for the performance of a Remedial Investigation 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 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 and meet the requirements of CERCLA section 120(e)(2), 42 U.S.C. § 9620(e)(2), pertaining to interagency agreements;

(e) Assure compliance, through this Agreement, with RCRA and other federal and State hazardous waste laws and regulations for matters covered herein;

(f) Coordinate response actions at the Site with the mission and support activities at Marine Corps Base Camp Pendleton;

(g) Expedite the cleanup process to the extent consistent with protection of human health and the environment;

(h) Provide for State involvement in the initiation, development, selection and enforcement of remedial actions to be undertaken at Marine Corps Base Camp Pendleton, 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;

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

2. PARTIES

2.1 The Parties to this Agreement are EPA, the Marine Corps, and the State of California. The terms of the Agreement shall

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

apply to and be binding upon EPA, the State of California, and the Marine Corps. The Department of the Navy hereby agrees to ensure the Marine Corps's performance of each of the Marine Corps's obligations hereunder.

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. The Marine Corps 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. The Marine Corps will notify EPA and the State of the identity and assigned tasks of each of its contractors performing work under this Agreement upon their selection.

2.4 The State of California is represented by DHS as lead agency and RWQCB as support agency. The responsibilities of the lead and support agencies are set forth in this Agreement, the Memorandum of Understanding between DHS and the State Water Resources Control Board and the Regional Water Quality Control Boards for the Cleanup of Hazardous Waste Sites (Aug. 1, 1990) and the Regional Memorandum of Understanding between DHS, Toxic Substances Control Program, Region 4, and RWQCB, each of which is an Attachment hereto. In the event of conflict, this Agreement shall govern.

3. JURISDICTION

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

(a) The U.S. Environmental Protection Agency (EPA), enters into those portions of this Agreement that relate to the remedial investigation/feasibility study (RI/FS) pursuant to CERCLA section 120(e)(1), 42 U.S.C. § 9620(e)(1), RCRA sections 6001, 3008(h) & 3004(u) and (v), 42 U.S.C. § 6961, 6928(h), 6924(u) & (v), and E.O. 12580;

(b) EPA enters into those portions of this Agreement that relate to operable units and final remedial actions pursuant

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

to CERCLA section 120(e)(2), 42 U.S.C. § 9620(e)(2), RCRA sections 6001, 3008(h) and 3004(u) & (v), 42 U.S.C. § 6961, 6928(h), 6924(u) & (v), and E.O. 12580;

(c) The Marine Corps enters into those portions of this Agreement that relate to the RI/FS pursuant to CERCLA section 120(e)(1), 42 U.S.C. § 9620(e)(1), RCRA sections 6001, 3008(h) and 3004(u) & (v), 42 U.S.C. § 6961, 6928(h), 6924(u) & (v), E.O. 12580, the National Environmental Policy Act, 42 U.S.C. § 4321, and DERP;

(d) The Marine Corps enters into those portions of this Agreement that relate to operable units and final remedial actions pursuant to CERCLA section 120(e)(2), 42 U.S.C. § 9620(e)(2), RCRA sections 6001, 3008(h), and 3004(u) & (v), 42 U.S.C. § 6961, 6928(h), 6924(u) & (v), E.O. 12580 and the DERP; and

(e) The State, represented by DHS and the RWQCB, enters into this Agreement pursuant to CERCLA sections 120(f) and 121, 42 U.S.C. § 9620(f) and 9621; California Health and Safety Code section 102 and division 20, chapters 6.5 and 6.8; and California Water Code division 7.

4. DEFINITIONS

4.1 Except as noted below or otherwise explicitly stated, the definitions provided in CERCLA, CERCLA case law, and the NCP shall control the meaning of terms used in this Agreement.

(a) "Agreement" shall mean this document and shall include all Appendices to this document except to the extent the Parties agree that any part of any Appendix is inconsistent with this Agreement. Except to such extent, all 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 selected 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 set forth in CERCLA section 120(a)(1), 42 U.S.C. § 9620(a)(1), subject to CERCLA section 121(d)(4), 42 U.S.C. § 9621(d)(4) and E.O. 12580 § 2(d) & (g).

(c) "CERCLA" shall mean the Comprehensive Environmental Response, Compensation and Liability Act, Public Law 96-510, 42 U.S.C. § 9601 et seq., as amended by SARA 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 holiday shall be

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

due on the following business day. References herein to specific numbers of days shall be understood to exclude the day of occurrence.

(e) "DERP" shall refer to the Defense Environmental Restoration Program, as defined in 10 U.S.C. § 2701.

(f) "Department of Defense" shall mean the U.S. Department of Defense.

(g) "DRC" shall have the meaning given in subsection 12.2.

(h) "DHS" shall mean the California Department of Health Services, its successors and its employees and authorized representatives.

(i) "EPA" shall mean the U.S. Environmental Protection Agency, its successors and its employees and authorized representatives.

(j) "Facility" shall have the same definition as in CERCLA section 101(9), 42 U.S.C. § 9601(9).

(k) "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. The Marine Corps shall conduct and prepare the FS in a manner to support the intent and objectives of Section 17 (Statutory Compliance/RCRA-CERCLA Integration).

(l) "FOIA" shall mean the Freedom of Information Act, 5 U.S.C. § 552 et seq., and any subsequent amendments thereto.

(m) "Marine Corps" shall mean the U.S. Marine Corps (a component of the U.S. Department of the Navy) and its employees, members, agents, and authorized representatives. "Marine Corps" shall also include the U.S. Department of the Navy and the U.S. Department of Defense, to the extent necessary to effectuate the terms of this Agreement, including, but not limited to, appropriations, funding and Congressional Reporting Requirements.

(n) "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.

(o) "National Contingency Plan" or "NCP" shall refer to the regulations contained in 40 C.F.R. § 300.1 et seq., including any amendments thereto.

(p) "Natural Resource Trustee(s)" and "Federal or State Natural Resource Trustees" shall have the same meaning and authority provided in CERCLA and the NCP.

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

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

(r) "Operable Unit" or "OU" shall have the meaning provided in the NCP.

(s) "Operation and maintenance" shall mean activities required to maintain the effectiveness of response actions.

(t) "Parties" shall mean the parties to this Agreement.

(u) "Project Manager" shall have the meaning given in Section 18 of this Agreement.

(v) "QAPP" shall mean a Quality Assurance Project Plan.

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

(x) "Remedial Design" or "RD" shall have the same meaning as provided in the NCP.

(y) "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 guidance. The RI serves as a mechanism for collecting data for Site and waste characterization and conducting treatability studies as necessary to evaluate performance and cost of the treatment technologies. The data gathered during the RI will also be used to conduct a baseline risk assessment, perform a feasibility study, and support design of a selected remedy. The Marine Corps shall conduct and prepare the RI in a manner to support the intent and objectives of Section 17 (Statutory Compliance/RCRA-CERCLA Integration).

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

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

(bb) "RWQCB" shall mean the Regional Water Quality Control Board, San Diego Region, its successors and its employees, members and authorized representatives.

(cc) "SARA" shall mean the Superfund Amendments and Reauthorization Act of 1986, Public Law 99-499.

(dd) "SEC" shall have the meaning given in subsection 12.6.

(ee) "Site," for purposes other than obtaining permits, shall include Marine Corps Base Camp Pendleton (including any adjacent real property subject to the jurisdiction of the commanding general of Marine Corps Base Camp Pendleton), the Facility (as defined above), and any area off the Facility to

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

or under which a release of hazardous substances has migrated, or reasonably threatens to migrate, from a source on or at Marine Corps Base Camp Pendleton. For purposes of obtaining permits, "on-site" shall have the meaning provided in the NCP and "off-site" shall mean all locations that are not on-site.

(ff) "State" shall mean the State of California and its employees and authorized representatives, represented by DHS and the RWQCB as set forth in this Agreement, and shall refer to both DHS and the RWQCB unless otherwise specified.

5. DETERMINATIONS

5.1 This Agreement is based upon the placement of Marine Corps Base Camp Pendleton, San Diego County, California, on the National Priorities List by EPA on Nov. 15, 1989, 54 Federal Register 48184.

5.2 Marine Corps Base Camp Pendleton is a facility under the jurisdiction, custody, or control of the U.S. Department of Defense within the meaning of E.O. 12580, 52 Federal Register 2923, 29 January 1987. The Department of the Navy is authorized to act in behalf of the Secretary of Defense for all functions delegated by the President through E.O. 12580 which are relevant to this Agreement.

5.3 Marine Corps Base Camp Pendleton is a federal facility under the jurisdiction of the Secretary of Defense within the meaning of CERCLA section 120, 42 U.S.C. § 9620, and SARA section 211, 10 U.S.C. § 2701 et seq., and subject to DERP.

5.4 The Department of the Navy is the authorized delegate of the President under E.O. 12580 for receipt of notification by the State of its ARARs as required by CERCLA section 121(d)(2)(A)(ii), 42 U.S.C. § 9621(d)(2)(A)(ii).

5.5 The authority of the Marine Corps to exercise the delegated removal authority of the President pursuant to CERCLA section 104, 42 U.S.C. § 9604, 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 Marine Corps Base Camp Pendleton where hazardous substances have been deposited, stored, placed, or otherwise come to be located in accordance with 42 U.S.C. § 9601(9) & (14).

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

5.8 There have been releases of hazardous substances, pollutants or contaminants at or from Marine Corps Base Camp Pendleton into the environment within the meaning of 42 U.S.C. § 9601(22), 9604, 9606, and 9607.

5.9 With respect to these releases, the Marine Corps is an owner, operator and/or generator subject to the provisions of 42 U.S.C. § 9607 and within the meaning of California Health and Safety Code section 25323.5(a), and is a person within the meaning of California Health and Safety Code section 25118 and California Water Code section 13050(c).

5.10 Included as an Attachment to this Agreement is a map showing areas 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 the tasks, obligations and responsibilities described in this Section in accordance with CERCLA and CERCLA guidance and policy; the NCP; pertinent provisions of RCRA and RCRA guidance and policy; E.O. 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 The Marine Corps 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;
- (c) Feasibility Studies for the Site;
- (d) All response actions, including Operable Units, 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 the public health, welfare and the environment.

6.4 Upon request, EPA and the State agree to provide any

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

Party with guidance or reasonable assistance in obtaining and interpreting guidance relevant to the implementation of this Agreement.

6.5 The Parties recognize that any discovered release of hazardous substances determined to have originated either on or off Marine Corps Base Camp Pendleton and to have been caused by a party other than the Marine Corps, including groundwater plumes mingled with plumes originating on Marine Corps Base Camp Pendleton, may be addressed by a separate agreement between the responsible parties and appropriate regulatory agencies. Nothing in this subsection 6.5 shall reduce or otherwise affect the Marine Corps's obligations under this Agreement except as may be specifically provided in such other agreement if EPA is a party thereto and such other agreement refers to 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. § 9620, and 10 U.S.C. § 2705, the Marine Corps will normally be responsible for issuing primary and secondary documents to EPA and the State. As of the effective date of this Agreement, all draft, draft final and final deliverable 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 and the State 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 the Marine Corps in draft subject to review and comment by EPA and the State. Following receipt of comments on a particular draft primary document, the Marine Corps 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 receipt by

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

EPA and the State 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 the Marine Corps in draft subject to review and comment by EPA and the State. Although the Marine Corps 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) The Marine Corps shall complete and transmit drafts of the following primary documents for each operable unit and for the final remedy to EPA and the State, for review and comment in accordance with the provisions of this Section; provided, however, that the Marine Corps need not complete a draft primary document for an operable unit if (x) 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 (y) the Parties agree in writing that such draft primary document need not be completed.

- (1) RI/FS Workplans, including Sampling and Analysis Plans
- (2) QAPPs
- (3) Community Relations Plans (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
- (5) FS Reports
- (6) Proposed Plans
- (7) Records of Decision (RODs)
- (8) Remedial Design Work Plan
- (9) Preliminary Remedial Design
- (10) Final Remedial Design
- (11) Remedial Action Work Plan
- (12) Construction Quality Assurance Plan
- (13) Construction Quality Control Plan
- (14) Contingency Plan
- (15) Project Closeout Report
- (16) Federal and State Natural Resource Trustee
- Notifications.
- (17) Operation and Maintenance Plan
- (b) Only draft final primary documents shall be

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

subject to dispute resolution. The Marine Corps shall complete and transmit draft primary documents in accordance with the timetable and deadlines established in Section 8 (Deadlines).

(c) Primary documents may include target dates for subtasks as provided in subsections 7.4(b) and 18.3. The purpose of target dates is to assist the Marine Corps 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) The Marine Corps shall complete and transmit drafts of the following secondary documents for each operable unit and for the final remedy to EPA and the State for review and comment; provided, however, that the Marine Corps need not complete a draft secondary document for an operable unit if (x) the same secondary document or a primary document completed or to be completed with respect to another operable unit covers all topics relevant to the operable unit at issue, and (y) the Parties agree in writing that such draft secondary document need not be completed.

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

(b) Although EPA and the State may comment on the drafts of the secondary documents listed above, such documents shall not be subject to dispute resolution except as provided by subsection 7.2. Target dates for the completion and transmission of draft secondary documents shall 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 Section 18.) The Project Managers shall meet in person approximately every ninety (90) days to review and discuss the progress of work being performed at the Site, including progress on the primary and secondary documents. However, such meetings may be held more frequently (but not more often than every thirty (30) days) as needed upon request by any Project Manager, or less frequently if agreed by the Parties. Prior to preparing any draft document

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

specified in subsections 7.3 or 7.4 above, 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 sources of ARARs in a timely manner as set forth in NCP § 300.515(d).

(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 shall submit the proposed ARARs obtained pursuant to paragraph 7.6(a) to the Marine Corps, 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) The Marine Corps will contact the agencies that failed to respond and again solicit their inputs.

(d) The Marine Corps 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) The Marine Corps shall complete and transmit each draft primary document to EPA and the State on or before the corresponding deadline established for the issuance of the document. The Marine Corps shall complete and transmit the draft secondary documents in accordance with the corresponding target dates.

(b) Review of any document by EPA and the State may concern all aspects of it (including completeness) and should include, but will not be limited to, technical evaluation of any aspect of the document and consistency with CERCLA, the NCP, applicable California law, and any pertinent guidance or policy

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

issued by EPA or the State (except that any State guidance that is not "promulgated" (as defined in the NCP) shall constitute a "to be considered" item (as that phrase is used in the NCP)). To expedite the review process, the Marine Corps shall make an oral presentation of each primary document at the next scheduled Project Managers meeting after transmittal of the draft document, and shall do so with respect to secondary documents if a majority of the Project Managers other than the Marine Corps so requests. Comments by the EPA, DHS and RWQCB shall be provided with adequate specificity so that the Marine Corps may respond 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 the Marine Corps, the EPA, DHS or RWQCB, as appropriate, the commenter shall provide a copy of the cited authority or reference.

(c) Unless the Parties agree to another period, all draft documents shall be subject to a sixty (60) day period for review and comment. At or before the close of the comment period, EPA and the State shall transmit their written comments to the Marine Corps. For unusually lengthy or complex documents, EPA or the State may extend the sixty (60) day comment period for an additional thirty (30) days by written notice to the Marine Corps prior to the end of the sixty (60) day period. In appropriate circumstances, this period may be further extended in accordance with Section 9 (Extensions).

(d) Representatives of the Marine Corps shall make themselves readily available to EPA and the State 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 the Marine Corps on the close of the comment period.

(e) In commenting on a draft document which contains a proposed ARAR determination, EPA, DHS or RWQCB shall include a reasoned statement of whether it objects to any portion of the proposed ARAR determination. To the extent that EPA or the State does object, it shall explain the basis for its objection in detail and shall identify any ARARs which it believes were not properly addressed in the proposed ARAR determination.

(f) Following the close of the comment period for a draft document, the Marine Corps shall give full consideration to all written comments. If the Marine Corps requests, the Parties shall hold a meeting to discuss such comments within fifteen (15) days of the close of the comment period on a draft secondary document or draft primary document. On a draft secondary document, the Marine Corps shall, within sixty (60) days of the close of the comment period, transmit to the EPA and the State its written response to the comments received. On a draft primary document, the Marine Corps shall, within sixty (60) days

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

of the close of the comment period, transmit to EPA and the State a draft final primary document, which shall include the Marine Corps's response to all written comments received within the comment period. While the resulting draft final document shall be the responsibility of the Marine Corps, it shall be the product of consensus to the maximum extent possible.

(g) The Marine Corps may extend the sixty (60) day period 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 and the State. 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 shall be available to the Parties for draft final primary documents as set forth in Section 12 (Dispute Resolution).

(b) When dispute resolution is 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 the Marine Corps's position be sustained. If the Marine Corps's determination is not sustained in the dispute resolution process, the Marine Corps shall prepare, within not more than 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 pursuant to subsection 7.9 above, 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 paragraphs 7.10(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 7.10(b)(1) and (2) below.

(b) In the event that a consensus is not reached by

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

the Project Managers on the need for a modification, any Party may invoke dispute resolution to determine if such modification shall be conducted. Modification of a document shall be required only upon a showing that:

(1) The requested modification is based on information that is (A) new (i.e., information that becomes available or known after the document was finalized) and (B) 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 or the State's ability to request the performance of additional work which was not contemplated by this Agreement. The Marine Corps' obligation to perform such work under this Agreement must be established by either a modification of a document or by amendments to this Agreement.

8. DEADLINES

8.1 All deadlines agreed upon before the effective date of this Agreement shall be made an Appendix to this Agreement. To the extent that deadlines have already been mutually agreed upon by the Parties prior to the execution of this Agreement, they 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 twenty-one (21) days of issuance of the Record of Decision for any operable unit or for the final remedy, the Marine Corps shall propose deadlines for completion of the following draft primary documents:

- (a) Remedial Design/Remedial Action Work Plans
- (b) Preliminary Remedial Design
- (c) Final Remedial Design
- (d) Construction Quality Assurance Plan
- (e) Construction Quality Control Plan
- (f) Contingency Plan
- (g) Project Closeout Report

Within fifteen (15) days of receipt, EPA, DHS and RWQCB shall review and provide comments to the Marine Corps regarding the proposed deadlines. Within fifteen (15) days following receipt of the comments the Marine Corps shall, as appropriate, make revisions and reissue the proposal. The Parties shall meet as necessary to discuss and finalize the proposed deadlines. All

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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 be published by EPA, in conjunction with the State, and shall become an Appendix to this Agreement.

8.3 For any operable units not identified as of the effective date of this Agreement, the Marine Corps shall propose deadlines for all documents listed in subsection 7.3(a)(1) through (7) (with the exception of the Community Relations Plan and any document that comes within the proviso to such subsection) 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 procedures set forth in subsection 8.2.

8.4 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.

9. EXTENSIONS

9.1 Timetables, deadlines and schedules shall be extended upon receipt of a timely request for extension and when good cause exists for the requested extension. Any request for extension by a Party shall be submitted to the other Parties in writing 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;
- (b) A delay caused by another Party's failure to meet any requirement of this Agreement;
- (c) A delay caused by or resulting from the good faith invocation of dispute resolution or the initiation of judicial

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

action;

(d) A delay caused, or which is likely to be caused, by an extension (including without limitation an extension under subsection 7.7) 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 or by receipt of unusually extensive public comments under the NCP in connection with the Marine Corps'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 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 of the receiving Party's position on the request. Any failure by a receiving Party to respond within the seven-day period shall be deemed to constitute concurrence with the request for extension. 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, the Marine Corps 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 days of receipt of a statement of nonconcurrence with the requested extension, the requesting Party may invoke dispute resolution.

9.7 A timely and good faith request by the Marine Corps 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

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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:

- (a) acts of God;
- (b) fire;
- (c) war or national emergency declared by the President or Congress and affecting the Marine Corps;
- (d) insurrection;
- (e) civil disturbance;
- (f) explosion;
- (g) unanticipated breakage or accident to machinery, equipment or lines of pipe despite reasonably diligent maintenance;
- (h) adverse weather conditions that could not be reasonably anticipated;
- (i) unusual delay in transportation;
- (j) restraint by court order or order of public authority;
- (k) 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 the Department of the Navy (including Marine Corps);
- (l) delays caused by compliance with applicable statutes or regulations governing contracting, procurement or acquisition procedures, despite the exercise of reasonable diligence; and
- (m) insufficient availability of appropriated funds which have been diligently sought. In order for Force Majeure based on insufficient funding to apply to the Marine Corps, the Marine Corps shall have made timely request for such funds as part of the budgetary process as set forth in Section 15 (Funding).

A Force Majeure shall also include any strike or other labor dispute, whether or not within the control of the Party affected thereby. Force Majeure shall not include increased costs or expenses of response actions, unless (i) such increase could not

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

reasonably have been anticipated at the time the estimate thereof was made and (ii) funding for such increase has been diligently sought and is not available.

11. EMERGENCIES AND REMOVALS

11.1 Discovery and Notification

If any Party discovers or becomes aware of an emergency or other situation that endangers public health or safety 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. If the emergency arises from activities conducted pursuant to this Agreement, the Marine Corps 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 otherwise 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 is 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 EPA Hazardous Waste Management Division Director 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. § 9601(23), and California Health and Safety Code section 25323, 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 E.O. 12580.

(c) Nothing in this Agreement shall alter the Marine Corps' authority with respect to removal actions conducted pursuant to section 104 of CERCLA, 42 U.S.C. § 9604.

(d) Nothing in this Agreement shall alter any authority the State or EPA may have with respect to removal

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

actions conducted at the Site.

(e) All reviews conducted by EPA and the State pursuant to 10 U.S.C. § 2705(b)(2) will be expedited so as not to unduly jeopardize fiscal resources of the Marine Corps for funding the removal actions.

(f) If a Party determines that there is 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, the Party may request that the Marine Corps 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), or such other relief as the public interest may require.

11.4 Notice and Opportunity to Comment

(a) The Marine Corps shall provide the other Parties with timely notice and opportunity to review and comment upon any proposed removal action for the Site, in accordance with 10 U.S.C. § 2705(a) and (b). The Marine Corps agrees to provide the information described below pursuant to such obligation.

(b) For emergency response actions, the Marine Corps shall provide EPA and the State with notice in accordance with subsection 11.1. Such oral notification shall, except in the case of extreme emergencies, 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 change in the situation should no action be taken or should action be delayed (including associated environmental impacts), any important policy issues, and the Marine Corps On-Scene Coordinator recommendations. Within forty-five (45) days of completion of the emergency action, the Marine Corps will furnish EPA and the State 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, the Marine Corps will provide EPA and the State with any information required by CERCLA or the NCP, and in accordance with pertinent EPA guidance, such as the Action Memorandum, the Engineering Evaluation/Cost Analysis (when required under the NCP) and, to the extent it is not otherwise included, all information required to be provided

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

in accordance with paragraph 11.4(b). 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 the Marine Corps in the progress reports described in Section 18 (Project Managers).

11.5 Any dispute between the Parties as to whether a proposed nonemergency response action is (a) properly considered a removal action, as defined by 42 U.S.C. § 9601(23), or (b) consistent, to the extent deemed practicable under CERCLA section 104(a)(2), with any remedial action shall be resolved pursuant to Section 12 (Dispute Resolution). Such dispute may be brought directly to the DRC or the SEC (each as defined in Section 12) at any Party's request.

11.6 Alternative Dispute Resolution for Subsection 11.3(f)

(a) The following procedures shall apply only to disputes as to whether the Marine Corps will take any removal action requested under subsection 11.3(f). Such disputes shall be submitted to the DRC, which shall have ten (10) days to unanimously resolve the dispute. The DRC shall forward an unresolved dispute to the SEC within four (4) days of the end of the ten-day period.

(b) 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 Regional Administrator of EPA Region 9. The Department of the Navy's representative on the SEC is the Commander, Southwest Division, Naval Facilities Engineering Command. The DHS representative on the SEC is the Regional Administrator, Region 4. The RWQCB representative on the SEC is the Assistant 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 seven (7) days, the Department of the Navy SEC representative shall issue a written position on the dispute. EPA or the State may, within four (4) days of the such representative's issuance of the Department of the Navy's position, issue a written notice elevating the dispute to the Department of the Navy's Secretariat Representative for resolution in accordance with all applicable laws and procedures. In the event EPA or the State elects not to elevate the dispute to the Secretariat Representative within the designated four (4) day escalation period, EPA and the State shall be deemed to have agreed with the Department of the Navy SEC representative's written position with respect to the

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

dispute.

(c) Upon escalation of a dispute to the Department of the Navy's Secretariat Representative pursuant to subsection 11.6(b) above, the Secretariat Representative will review and resolve the dispute within seven (7) days. Before resolving the dispute, the Secretariat Representative shall, upon request, meet and confer with the EPA Administrator, the DHS Chief Deputy Director and the RWQCB Executive Officer to discuss the issue(s) under dispute. The Secretariat Representative shall provide the EPA and the State with its final decision in writing. If EPA or the State does not concur with such decision, the nonconcurring party must transmit indication thereof to the Secretariat Representative within fourteen (14) days of receipt of such decision. Failure to transmit such nonconurrence will be presumed to signify concurrence.

12. DISPUTE RESOLUTION

12.1 Except as specifically set forth in subsection 11.6 or 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 informally resolve disputes 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) receipt by EPA and the State 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.

12.3 Prior to any Party's issuance of a written statement of a dispute, the disputing Party shall engage the other Party 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 are necessary to discuss and attempt resolution of the dispute.

12.4 The DRC will serve as a forum for resolution of dispute for which agreement has not been reached through informal dispute resolution. The Parties shall each designate one individual and an alternate to serve on the DRC. The individuals designated to serve on the DRC shall be employed at the policy

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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 DRC is the Assistant Director for Superfund of EPA's Region 9. The Department of the Navy's designated member is the Director, Facilities Management, Southwest Division, Naval Facilities Engineering Command. The DHS representative is the DHS Chief of the Site Mitigation Branch, Region 4. The RWQCB representative is the Chief, Land Disposal/Site Investigation Unit. 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 to unanimously resolve the dispute within this twenty-one (21) day period, the written statement of dispute shall be forwarded to the Senior Executive Committee (SEC) for resolution within seven (7) days after the close of the twenty-one (21) day resolution period.

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 Regional Administrator of EPA Region 9. The Department of the Navy's representative on the SEC is the Commander, Southwest Division, Naval Facilities Engineering Command. The DHS representative on the SEC is the Regional Administrator, Region 4. The RWQCB representative on the SEC is the Assistant 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, EPA's Regional Administrator shall issue a written position on the dispute. The Department of the Navy or the State may, within fourteen (14) days of the Regional Administrator's issuance of EPA's position, issue a written notice elevating the dispute to the Administrator of EPA for resolution in accordance with all applicable laws and procedures. In the event the Department of the Navy or the State elects not to elevate the dispute to the Administrator within the designated fourteen (14) day escalation period, the Department of the Navy and the State shall be deemed to have agreed with the Regional Administrator's written position with respect to the dispute.

12.7 Upon escalation of a dispute to the Administrator of EPA pursuant to subsection 12.6 above, the Administrator will

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

review and resolve the dispute within twenty-one (21) days. Upon request, and prior to resolving the dispute, the EPA Administrator shall meet and confer with the Department of the Navy's Secretariat Representative, the DHS Chief Deputy Director and the RWQCB Executive Officer to discuss the issue(s) under dispute. Upon resolution, the Administrator shall provide the Department of the Navy and the State with a written final decision setting forth resolution of the dispute. The duties of the 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 that the time period for completion of work affected by such dispute shall be extended for a period of time usually not to exceed the actual time taken to resolve any good faith dispute in accordance with the procedures specified herein. 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 Hazardous Waste Management Division Director for 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. DHS or RWQCB may request the EPA Hazardous Waste Management Division Director 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 EPA Hazardous Waste Management Division Director will issue, in writing, a final decision with respect to the work stoppage. The final written decision of the EPA Hazardous Waste Management Division Director 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

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

dispute pursuant to the procedures specified in this Section (or before such later date as is agreed by the Parties), the Marine Corps 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. The deadline set forth above may in appropriate circumstances be extended in accordance with Section 9 (Extensions).

12.11 Except as set forth in Section 31 (Covenant Not to Sue and Reservation of Rights), resolution of a dispute pursuant to this Section (as it may be modified pursuant to subsection 11.6) 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.

12.12 For purposes of all dispute resolution procedures set forth in this Agreement and other decisions of the Parties that may be taken to dispute resolution, the Parties agree as follows:

(a) DHS and RWQCB will jointly designate which of the two agencies shall voice the State's position for specified subjects and which shall do so for unspecified subjects. DHS and RWQCB shall provide EPA and the Marine Corps with an initial designation within thirty (30) days after the execution of this agreement. DHS and RWQCB may modify the initial designation or subsequent designations. DHS and RWQCB shall notify EPA and the Marine Corps in writing of any modification. Such modification shall become effective upon receipt by EPA and the Marine Corps.

(b) The agency designated in accordance with paragraph 12.12(a) shall represent the State with a single voice throughout the dispute resolution process and in all decisions of the Parties that may be taken to dispute resolution.

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, and any violation of such standard, regulation, condition, requirement or order will be subject to civil penalties under CERCLA sections 310(c) and 109;

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

(b) All timetables or deadlines associated with the RI/FS shall be enforceable by any person pursuant to CERCLA section 310, and any violation of such timetables or deadlines will be subject to civil penalties under CERCLA sections 310(c) and 109;

(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(c), and any violation of such terms or conditions will be subject to civil penalties under CERCLA sections 310(c) and 109; and

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

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).

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, including but not limited to any rights under sections 113 and 310, 42 U.S.C. § 9613 and 9659, and/or applicable state law. The Marine Corps does not waive any rights it may have under CERCLA sections 120 and 121, SARA section 211 and E.O. 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 the Marine Corps (a) fails to submit a primary document listed in Section 7 (Consultation) to EPA and the State pursuant to the appropriate timetable or deadline in accordance with the requirements of this Agreement, or (b) fails to comply with a term or condition of this Agreement which

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

relates to an operable unit or final remedial action (unless excused under this Agreement), EPA may assess a stipulated penalty against the Marine Corps. The State 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 an event described in subsection 14.1(a) or 14.1(b) has occurred, EPA shall notify the Marine Corps in writing. If the failure in question is not already subject to dispute resolution at the time such notice is received, the Marine Corps shall have fifteen (15) days after receipt of the notice to invoke dispute resolution on the question whether such event has in fact occurred. The Marine Corps shall not be liable for the stipulated penalty assessed by EPA if the event is determined, through the dispute resolution process, not to have occurred. No assessment of a stipulated penalty shall be final until the conclusion of 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. § 9620(e)(5), shall include, with respect to each final assessment of a stipulated penalty against the Marine Corps 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 to the Hazardous Substances Response Trust Fund only in the manner and to the extent expressly provided for in acts authorizing funds for, and appropriations to, the Department of Defense. EPA and the State agree, to the extent allowed by law, to share equally any stipulated penalties paid on behalf of Marine Corps Base Camp Pendleton between the Hazardous Substance Response Trust Fund and an appropriate State fund.

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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. § 9609.

14.6 This Section shall not affect the Marine Corps' 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 officer or employee of the Marine Corps 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 the Marine Corps arising under this Agreement will be fully funded. The Marine Corps agrees to seek sufficient funding through the Department of Defense budgetary process to fulfill its obligations under this Agreement.

15.2 In accordance with CERCLA section 120(e)(5)(B), 42 U.S.C. § 9620 (e)(5)(B), the Marine Corps shall include, in its submission to the Department of Defense 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 the Marine Corps 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. § 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 the Marine Corps' 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.

15.5 Funds authorized and appropriated annually by Congress under the "Environmental Restoration, Defense" appropriation in

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

the Department of Defense Appropriation Act and allocated by the Deputy Assistant Secretary of Defense for Environment to the Department of the Navy will be the source of funds for activities required by this Agreement consistent with section 211 of CERCLA, 10 U.S.C. Chapter 160. However, should the Environmental Restoration, Defense appropriation be inadequate in any year to meet the total Department of the Navy CERCLA implementation requirements, the Department of Defense shall employ and the Department of the Navy shall follow a standardized Department of Defense prioritization process which allocates that year's appropriations in a manner which maximizes the protection of human health and the environment. A standardized Department of Defense prioritization model shall be developed and utilized with the assistance of EPA and the states.

16. EXEMPTIONS

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

- (a) A Presidential order of exemption issued pursuant to the provisions of CERCLA section 120(j)(1), 42 U.S.C. § 9620(j)(1), or RCRA section 6001, 42 U.S.C. § 6961; or
- (b) The order of an appropriate court.

16.2 The State reserves any statutory right it may have to challenge any Presidential order relieving the Marine Corps of its obligations to comply with this Agreement.

17. STATUTORY COMPLIANCE/RCRA-CERCLA INTEGRATION

17.1 The Parties intend to integrate into this comprehensive Agreement the Marine Corps's CERCLA response obligations with the Marine Corps's (a) RCRA corrective action obligations, (b) State corrective/remedial action obligations, and (c) obligations under all Orders and other statutory requirements of RWQCB, in each case relating to releases of hazardous substances, hazardous wastes, pollutants or contaminants covered by this Agreement and which have been or will be adequately addressed by the remedial actions provided for under this Agreement. Therefore, the Parties intend that activities covered by this Agreement will achieve compliance with CERCLA, 42 U.S.C. § 9061 et seq.; satisfy the corrective action requirements of RCRA section 3004(u) & (v), 42 U.S.C. § 6924(u) & (v), for a RCRA permit, and RCRA section 3008(h), 42 U.S.C. § 6928(h), for interim status facilities; and meet or exceed all

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

applicable or relevant and appropriate federal and State laws and regulations, to the extent required by CERCLA section 121, 42 U.S.C. § 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 or otherwise applicable State hazardous waste or water quality protection laws (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 and such State laws shall be considered an applicable or relevant and appropriate requirement pursuant to CERCLA section 121, 42 U.S.C. § 9621.

17.3 The Parties recognize that the requirement to obtain permits for response actions undertaken pursuant to this Agreement shall be as provided in CERCLA and the NCP. The Parties further recognize that ongoing hazardous waste management activities at Marine Corps Base Camp Pendleton 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 the Marine Corps 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.

18. PROJECT MANAGERS

18.1 Within ten (10) days after the date of execution of this Agreement, EPA, the Marine Corps, DHS and RWQCB 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 the Marine Corps, EPA, and the State on all documents, including reports, comments, and

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

other correspondence concerning the activities performed pursuant to this Agreement, shall be directed through the Project Managers. A contractor may not serve as Project Manager, unless the other Parties shall consent in writing.

18.2 The Marine Corps, EPA, DHS and RWQCB may change their respective Project Managers. The other Parties shall be notified in writing within five days of the change.

18.3 The Project Managers shall meet to discuss progress as described in subsection 7.5. Although the Marine Corps has ultimate responsibility for meeting its respective deadlines or schedule, the Project Managers shall assist in this effort by consolidating 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, the Marine Corps 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, the minutes of each progress meeting, the meeting agenda and all documents discussed during the meeting that were not previously provided shall constitute a progress report. The Marine Corps will send to all Project Managers (a) within ten business days after the meeting, all such documents not previously provided and (b) within twenty-one calendar days after the meeting, the minutes and agenda. If an extended period occurs between Project Manager progress meetings, the Project Managers may agree that the Marine Corps 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.

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 Marine Corps Base Camp Pendleton) hereof;
- (c) Reviewing records, files and documents relevant to the work performed, subject to the limitations set forth in

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

subsection 23.1 hereof;

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

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

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. The Marine Corps 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 the Marine Corps shall be responsible for day-to-day field activities at the Site. The Marine Corps Project Manager or other designated representative of Marine Corps Base Camp Pendleton 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 Marine Corps Project Manager shall inform the command post at Marine Corps Base Camp Pendleton of the name and telephone number of the designated representative 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, DHS, RWQCB or Marine Corps Project Managers from the Facility shall not be cause for work stoppage of activities taken under this Agreement.

18.8 If the Project Manager for DHS or RWQCB cannot attend any Project Managers' meeting, the agency unable to attend shall provide reasonable notice (48 hours' advance notice if possible) to all other Project Managers regarding such absence and whether the Project Manager for the other State agency is authorized to speak for the absent agency. If such other agency's Project Manager is not so authorized, the absent agency shall, to the extent practical, provide its concerns and comments to all other Parties within a reasonable time prior to the meeting.

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

19. PERMITS

19.1 The Parties recognize that under sections 121(d) and 121(e)(1) of CERCLA, 42 U.S.C. § 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 requirement to obtain a federal, State, or local permit but must satisfy all the promulgated (as defined in NCP § 300.400(g)(4)) applicable or relevant and appropriate federal and State substantive standards, requirements, criteria, or limitations which would have been included in any such permit.

19.2 This Section is not intended to relieve the Marine Corps from any applicable 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 The Marine Corps shall notify EPA and the State in writing of any permit required for off-site activities as soon as it becomes aware of the requirement. The Marine Corps agrees to obtain any permits necessary for the performance of any work under this Agreement. Upon request, the Marine Corps shall provide EPA and the State 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 Marine Corps Project Manager, the Project Managers of EPA and the State will assist Marine Corps Base Camp Pendleton 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, the Marine Corps agrees to designate a Quality Assurance Officer (QAO) who will ensure that all work is performed in accordance with approved work plans, sampling plans and QAPPs. The QAO shall maintain for inspection a log of quality assurance field activities and provide a copy to the Parties upon request.

20.2 To ensure compliance with the QAPP, the Marine Corps shall, upon request by EPA or the State, use its best efforts to obtain access to all laboratories performing analysis on behalf of the Marine Corps pursuant to this Agreement. If such access

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

is not obtained for any laboratory, EPA or the State may reject all or portions of the data generated by such laboratory and require the Marine Corps to have the same or comparable data analyzed by a laboratory that will grant such access.

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, or by certified mail if transmitted sufficiently ahead of the applicable deadline. Notifications shall be deemed effective 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:

EPA:

Roberta Blank
Remedial Project Manager, Marine Corps Base
Camp Pendleton
U.S. Environmental Protection Agency, Region 9
Hazardous Waste Management Division, H-7-5
1235 Mission Street
San Francisco, CA 94103

State:

Leonard Miller, Project Manager
Preremedial and Federal Facilities Unit
California Department of Health Services
Toxic Substances Control Division
Region 4, Site Mitigation Branch
245 West Broadway, Suite 350
Long Beach, CA 90802; and

Margo Bodakian
Water Resource Control Engineer
Regional Water Quality Control Board, San Diego Region
9771 Clairemont Mesa Blvd., Suite B
San Diego, CA 92124-1331

Marine Corps:

Edward Dias, Remedial Project Manager
Southwest Division
Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, CA 92132-5190

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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

22. DATA AND DOCUMENT AVAILABILITY

22.1 Each Party shall make all sampling results, test results or other data or documents generated through the implementation of this Agreement available to the other Parties. All 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, raw data or results shall be submitted within the sixty (60) day period and quality assured data or results shall be submitted as soon as they become available. The procedures of Section 9 (Extensions) shall apply to the sixty-day period referred to herein.

22.2 The sampling Party's Project Manager shall notify the other Parties' Project Managers not less than 10 days in advance of any sample collection. If it is not possible to provide 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. Other Parties desiring to collect split or duplicate samples shall inform the sampling Party before the time of sample collection. Each Party receiving split or duplicate samples shall on request provide the sampling Party with its chain of custody documents relating to such sample.

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 or the Installation Restoration Program. If the Party that is the subject of the request (the originating Party) has the record or document, that Party shall provide to the requesting Party access to or a copy of the record or document; provided, however, that no such access or copy need be provided if the record or document is identified as confidential and is subject to a claim of confidentiality because of attorney-client privilege or attorney work product or under the following provisions of FOIA: deliberative process, enforcement confidentiality, or properly classified for national security under law or executive order.

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

23.2 Records or documents identified by the originating Party as confidential pursuant to (a) non-disclosure provisions of FOIA other than those listed in subsection 23.1 above, or (b) the California Public Records Act, section 6250 et seq. of the California Government Code, shall be released to the requesting Party if the requesting Party states in writing that it will not release the record or document to the public without first consulting with the originating Party and either (x) receiving the originating Party's prior approval or (y) if the originating Party does not approve, giving the originating Party opportunity to contest, in accordance with applicable statutes and regulations, the preliminary decision to release. 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 one of the above exemptions, including any available under FOIA or the California Public Records Act, even if available, if no governmental interest (including the interest established by law in protecting confidential business information) would be jeopardized by access or release as determined solely by the asserting Party.

23.4 Subject to section 120(j)(2) of CERCLA, 42 U.S.C. § 9620(j)(2), any documents required to be provided by Section 7 (Consultation) and analytical data showing test results will not be subject to subsection 23.2 or the proviso to subsection 23.1.

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

23.6 Disputes between EPA and the Marine Corps concerning matters covered by this Section 23 shall be subject to Section 12 (Dispute Resolution). Disputes between (a) DHS or the RWQCB and (b) EPA or the Marine Corps shall not be subject to Section 12 and shall instead be pursued through the originating Party's standard procedures concerning releasability of documents under FOIA or the California Public Records Act.

24. PRESERVATION OF RECORDS

24.1 Notwithstanding any document retention policy to the contrary, during the pendency of this Agreement and for a minimum of ten years after its termination, (a) the Marine Corps shall preserve all records and documents that were at any time in its possession or in the possession of its contractors and (b) each

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

other Party shall preserve all records and documents it prepared or to which it substantially contributed, in each case that relate to (x) the implementation of the Installation Restoration Program at the Site, or (y) the actions carried out pursuant to this Agreement. After this ten-year period, each Party shall notify the other Parties at least 45 days prior to destruction of any such records or documents.

25. ACCESS TO MARINE CORPS BASE CAMP PENDLETON

25.1 Without limitation of any authority conferred on EPA or the State by statute or regulation, EPA, the State or their authorized representatives shall be allowed to enter Marine Corps Base Camp Pendleton at reasonable times for purposes consistent with the provisions of the Agreement, subject to any statutory and regulatory requirements necessary to protect national security or mission essential activities. Such access shall include, but not be limited to, reviewing the progress of the Marine Corps 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, the State, or the Project Managers deem necessary.

25.2 The Marine Corps shall honor all reasonable requests for access by the EPA or the State, conditioned upon presentation of proper credentials. The Marine Corps Project Manager or his/her designee will provide briefing information, coordinate access and escort to restricted or controlled-access areas, arrange for base passes and coordinate any other access requests which arise.

25.3 EPA and the State shall provide reasonable notice (which shall, if practical, be 48 hours' advance notice) to the Marine Corps Project Manager to request any necessary escorts. EPA and the State shall not use any camera, sound recording or other recording device at Marine Corps Base Camp Pendleton without the permission of the Marine Corps Project Manager. The Marine Corps shall not unreasonably withhold such permission.

25.4 The access by EPA and the State granted in subsection 25.1 shall be subject to those regulations necessary to protect national security or mission essential activities. Such regulation shall not be applied so as to unreasonably hinder EPA or the State from carrying out their responsibilities and authority pursuant to this Agreement. In the event that access requested by either EPA or the State is denied by the Marine Corps, the Marine Corps shall provide an explanation within 48

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

hours of the reason for the denial, including reference to the applicable regulations, and, upon request, a copy of such regulations. The Marine Corps shall expeditiously make alternative arrangements for accommodating the requested access. The Parties agree that this Agreement is subject to CERCLA section 120(j), 42 U.S.C. § 9620(j), regarding the issuance of Site Specific Presidential Orders as may be necessary to protect national security.

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

25.6 All Parties with access to Marine Corps Base Camp Pendleton 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 Marine Corps property, the Marine Corps shall use its best efforts, including its authority under CERCLA section 104, to obtain access agreements from the owners which shall provide reasonable access for the Marine Corps, EPA, and the State and their representatives. The Marine Corps may request the assistance of the State in obtaining such access, and upon such request, the State will use its best efforts to obtain the required access. In the event that the Marine Corps is unable to obtain such access agreements, the Marine Corps shall promptly notify EPA and the State.

25.8 With respect to non-Marine Corps property on which monitoring wells, pumping wells, or other response actions are to be located, the Marine Corps 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 of title, easement, or other interest in the property shall be consummated without the continued right of entry.

25.9 Nothing in this Section shall be construed to limit EPA's and the State's full right of access as provided in 42

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

U.S.C. § 9604(e) and California Health and Safety Code section 25185, except as that right may be limited by 42 U.S.C. § 9620(j)(2), E.O. 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. § 9313(k) and 9617, relevant community relations provisions in the NCP, EPA guidances, and, to the extent they may apply, State statutes and regulations. The State agrees to inform the Marine Corps 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 (Statutory Compliance/RCRA-CERCLA Integration).

26.2 The Marine Corps shall develop and implement a community relations plan (CRP) addressing the environmental activities and elements of work undertaken by the Marine Corps, except as provided in Section 11 hereof.

26.3 The Marine Corps 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 guidances. A copy of each document placed in the administrative record, not already provided, will be provided by the Marine Corps to the other Parties. The administrative record developed by the Marine Corps 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 48 hours prior to issuance.

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

27. FIVE-YEAR REVIEW

27.1 Consistent with 42 U.S.C. § 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 proposes additional work or modification of work, such proposal 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 No change in the ownership of Marine Corps Base Camp Pendleton shall in any way alter the responsibility of the Parties under this Agreement. The Marine Corps shall not transfer any real property comprising the federal facility except in compliance with section 120(h) of CERCLA, 42 U.S.C. § 9620(h). Prior to any sale of any portion of the land comprising the federal facility which includes an area within which any release of hazardous substance has come to be located, or any property which is necessary for proceeding with the remedial action, the Marine Corps shall give written notice of that condition to the buyer of the land. At least thirty (30) days prior to any conveyance subject to section 120(h) of CERCLA, the Marine Corps shall notify all Parties of the transfer of any real property subject to this Agreement and the provisions made for any additional remedial actions, if required. The provisions of this subsection 28.1 shall not apply to the extent federal statute adopted after the effective date of this Agreement places restrictions on transfer of real property by the Marine Corps that are inconsistent with such provisions.

28.2 Until six months following the effective date of the final regulations implementing CERCLA section 120(h)(2), 42

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

U.S.C. § 9620(h)(2), the Marine Corps agrees to comply with the most recent version of the regulations as proposed and all other substantive and procedural provisions of CERCLA section 120(h) and subsection 28.1.

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 to sign the amendment or modification sends its notification of signing to the other Parties. The Parties may agree to a different effective date.

30. TERMINATION OF THE AGREEMENT

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

30.2 This Section shall not affect the requirements for periodic review at maximum five-year intervals of the efficacy of the remedial actions.

31. COVENANT NOT TO SUE AND RESERVATION OF RIGHTS

31.1 In consideration for the Marine Corps'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, the Marine Corps, and the State agree that compliance with this Agreement shall stand in lieu of any administrative, legal, and equitable remedies against the Marine Corps 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

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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. The above notwithstanding, EPA and the State reserve all rights each may have with regard to the Marine Corps's taking any removal action requested under subsection 11.3(f) after exhaustion of the alternative dispute resolution process set forth in subsection 11.6.

31.2 Notwithstanding this Section or any other Section of this Agreement, the State shall retain 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.

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 federal facility. Unless specifically agreed to in writing by the Parties, EPA and the State shall not be held as a party to any contract entered into by the Department of the Navy (including the Marine Corps) to implement the requirements of this Agreement.

32.2 This Agreement shall not restrict EPA, the State or the Marine Corps 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 Compensation for State support services rendered in

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

connection with this Agreement are governed by the Defense/State Memorandum of Agreement, executed on May 31, 1990, between DHS on behalf of the State and the Department of Defense. In the event such Memorandum of Agreement is terminated or no longer in effect for any reason, subsections 34.2 through 34.12 shall apply.

34.2 The Marine Corps 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 it incurs in providing services in direct support of the Marine Corps's environmental restoration activities pursuant to this Agreement at the Site.

34.3 Reimbursable expenses shall consist only of actual expenditures required to be made and actually made by the State in providing the following assistance to Marine Corps Base Camp Pendleton:

- (a) Timely technical review and substantive comment on reports or studies which the Marine Corps prepares in support of its response actions and submits to the State.
- (b) Identification and explanation of unique State requirements applicable to military installations in performing response actions, especially State ARARs.
- (c) Field visits to ensure investigations and clean-up activities are implemented in accordance with appropriate State requirements, or in accordance with agreed upon conditions between the State and the Marine Corps that are established in the framework of this Agreement.
- (d) Support and assistance to the Marine Corps 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 Marine Corps Technical Review Committees.
- (f) Other services specified in this Agreement.

34.4 Within ninety (90) days after the end of each quarter of the federal fiscal year, the State shall submit to the Marine Corps an accounting of all State costs actually incurred during that quarter in providing direct support services under this Section. Such accounting shall be accompanied by cost summaries and be supported by documentation which meets federal auditing requirements. The summaries will set forth employee-hours and other expenses by major type of support service. All costs submitted must be for work directly related to implementation of this Agreement and not inconsistent with either the National Contingency Plan (NCP) or the requirements described in OMB Circulars A-87 (Cost Principles for State and Local Governments)

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

and A-128 (Audits for State and Local Cooperative Agreements with State and Local Governments) and Standard Forms 424 and 270. The Marine Corps has the right to audit cost reports used by the State to develop the cost summaries. Before the beginning of each fiscal year, the State shall supply a budget estimate of what it plans to do in the next year in the same level of detail as the billing documents.

34.5 Except as allowed pursuant to subsections 34.6 or 34.7 below, within ninety (90) days of receipt of the accounting provided pursuant to subsection 34.3 above, the Marine Corps shall reimburse the State in the amount set forth in the accounting.

34.6 In the event the Marine Corps contends that any of the costs set forth in the accounting provided pursuant to subsection 34.4 above are not properly payable, the matter shall be resolved through the process set forth in subsection 34.10 below.

34.7 The Marine Corps 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 Marine Corps's total lifetime project costs incurred through construction of the remedial action(s). Circumstances could arise whereby fluctuations in the Marine Corps estimates or actual final costs through the construction of the final remedial action creates 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. This Section does not cover the cost of services rendered prior to October 17, 1986; services and properties not owned by the federal government; and activities funded from sources other than Defense Environmental Restoration Account appropriations.

(a) Funding of support services must be constrained so as to avoid unnecessary diversion of the limited Defense Environmental Restoration Account funds available for the overall cleanup, and

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

34.8 Either the Marine Corps or the State may request, on the basis of significant upward or downward revisions in the Marine Corps's estimate of its total lifetime costs through

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

construction used in subsection 34.7 above, a renegotiation of the cap. Failing an agreement, either the Marine Corps or the State may initiate dispute resolution in accordance with subsection 34.10 below.

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

34.10 Section 12 (Dispute Resolution) notwithstanding, this subsection shall govern any dispute between the Marine Corps 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. While it is the intent of the Marine Corps and the State that these procedures shall govern resolution of disputes concerning State reimbursement, informal dispute resolution is encouraged.

(a) The Marine Corps, DHS and RWQCB Project Managers shall be the initial points of contact for coordination of dispute resolution under this Subsection.

(b) If the Marine Corps, DHS and RWQCB Project Managers are unable to resolve a dispute, the matter shall be referred to the Commander, Southwest Division, Naval Facilities Engineering Command, or his designated representative, the DHS Regional Administrator, Region 4, and the RWQCB Assistant Executive Officer as soon as practicable, but in any event within five (5) working days after the dispute is elevated by the Project Managers.

(c) If the persons listed in paragraph 34.10(b) above are unable to resolve the dispute within ten (10) working days, the matter shall be elevated to the DHS Chief Deputy Director, the RWQCB Executive Officer and the Deputy Assistant Secretary of the Navy for Installations and the Environment.

(d) In the event persons listed in paragraph 34.10(c) above are unable to resolve a dispute, 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.

34.11 Nothing herein shall be construed to limit the ability of the Marine Corps to contract with the State for

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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 Marine Corps Base Camp Pendleton;

(b) Laboratory analysis; or

(c) Data collection for field studies.

34.12 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 either DHS or RWQCB fails to sign this Agreement within thirty (30) days of notification of the signature by both EPA and the Department of the Navy, this Agreement will be interpreted as if that agency were not a signatory and any reference to that agency in this Agreement will have no effect.

35.2 If both DHS and RWQCB do not sign this Agreement within the 30-day period described in subsection 35.1, this Agreement will be interpreted as if the State were not a Party and any reference in this Agreement to the State, DHS and RWQCB will have no effect. In addition, Marine Corps Base Camp Pendleton shall have to comply only with those State requirements, conditions or standards, including those specifically listed in this Agreement, that Marine Corps Base Camp Pendleton would otherwise have had to comply with absent this Agreement.

35.3 If either subsection 35.1 or subsection 35.2 applies,

(a) the Marine Corps agrees to transmit all primary and secondary documents to the agency or agencies that did not sign this Agreement at the same time such documents are transmitted to EPA; and

(b) EPA intends to consult with the agency or agencies that did not sign this Agreement with respect to the above documents and during implementation of this Agreement.

36. EFFECTIVE DATE AND PUBLIC COMMENT

36.1 The provisions of this Section shall be carried out in a manner consistent with, and shall fulfill the intent of Section

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

17 (Statutory Compliance/RCRA-CERCLA Integration).

36.2 Within fifteen (15) days of the date of the execution of this Agreement, the Marine Corps shall announce the availability of this Agreement to the public for a forty-five (45) day period of review and comment, including publication in at least two major local newspapers of general circulation. Comments received shall be transmitted to the other Parties within seven (7) days after the end of the comment period. The Parties shall review such comments within fourteen (14) days after such seven-day period and shall meet within seven (7) days after such 14-day period to determine whether this Agreement should be made effective in its present form.

(a) If it is determined that this Agreement should be made effective, EPA shall promptly notify all Parties in writing, and this Agreement shall become effective on the date that Marine Corps Base Camp Pendleton receives such notification.

(b) If the determination in paragraph 36.2(a) is not made, the Parties shall meet to discuss any proposed changes. If changes are agreed upon, the Agreement, as modified, shall be re-executed by the Parties, with EPA signing last, and shall become effective on the date it is signed by EPA.

(c) If the Parties cannot agree to modify this Agreement pursuant to paragraph 36.2(b) within the second seven day period set forth above (or within such other time period as the Parties agree upon), the Parties shall submit their written notices of position concerning those provisions still in dispute to the DRC. If the DRC is unable to resolve the dispute, the dispute shall be elevated to the SEC. If changes are agreed upon by the DRC or SEC, the Agreement, as modified, shall be re-executed by the Parties, with EPA signing last, and shall become effective on the date it is signed by EPA.

(d) If the SEC cannot resolve the dispute and the proposed changes would impose substantial additional obligations on a Party, such Party may withdraw from this Agreement. Withdrawal by the Marine Corps shall not affect the obligation of the Marine Corps to comply with CERCLA section 120, 42 U.S.C. § 9620, or limit the enforcement powers of EPA or the State.

36.3 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.

**EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton**

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

37. BASE CLOSURE

37.1 The Marine Corps does not currently plan to close Marine Corps Base Camp Pendleton. However, in the event that Marine Corps Base Camp Pendleton is closed, such closure, except as is otherwise specifically provided by law, will not affect the Marine Corps'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 Marine Corps Base Camp Pendleton);

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

(c) Designation of alternate DRC members as appropriate for the purposes of implementing Section 12 (Dispute Resolution); and

(d) Adequate resolution of any other problems identified by the Project Managers regarding the effect of base closure on the implementation of this Agreement.

37.2 Base 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 shall be an integral and enforceable part of this Agreement. They shall include the most current versions of:

(a) Deadlines previously established.

(b) Site-specific outline of key elements to be included in the RI/FS Workplan, QAPP, Community Relations Plan, RI Report, FS Report and Treatability Studies.

(c) All final primary and secondary documents which will be created in accordance with Section 7 (Consultation).

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

(d) All deadlines which will be established in accordance with Section 8 (Deadlines) and which may be extended in accordance with Section 9 (Extensions).

(e) All final primary documents and all completed secondary documents agreed upon by the Parties prior to the effective date of this Agreement.

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) Map(s) of Marine Corps Base Camp Pendleton (see also subsection 5.10)
 - X (b) Chemicals of Concern
 - " (c) Statement of Facts
 - (d) Installation Restoration Program Activities
-

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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.

UNITED STATES DEPARTMENT OF THE NAVY

DATE

NANCY STEHLE
Deputy Director
Assistant Secretary of the Navy
(Installations and Environment)

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

DATE

DANIEL W. MCGOVERN
Regional Administrator, Region 9

STATE OF CALIFORNIA

DEPARTMENT OF HEALTH SERVICES

9/27/90

DATE



JOHN A. HINTON
Regional Administrator, Region 4
Toxic Substances Control Program

REGIONAL WATER QUALITY CONTROL BOARD,
SAN DIEGO REGION

DATE

ARTHUR COE
Executive Officer

EPA Region IX/State of California/Marine Corps FFA
Marine Corps Base Camp Pendleton

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.

UNITED STATES DEPARTMENT OF THE NAVY

DATE

NANCY STEHLE
Deputy Director
Assistant Secretary of the Navy
(Installations and Environment)

UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY

DATE
"

DANIEL W. MCGOVERN
Regional Administrator, Region 9

STATE OF CALIFORNIA

DEPARTMENT OF HEALTH SERVICES


DATE

JOHN A. HINTON
Regional Administrator, Region 4
Toxic Substances Control Program

REGIONAL WATER QUALITY CONTROL BOARD,
SAN DIEGO REGION

10/1/90

DATE



ARTHUR COE
Executive Officer

Appendices

- A) Deadlines Previously Established
- B) Outline of Topics to Be Addressed in the RI/FS
- C) All Final and Secondary Documents Which Will Be Created in Accordance With Section 7 (Consultation)
- D) All Deadlines Which Will Be Established In Accordance With Section 8 (Deadlines) and Which May Be Extended in Accordance With Section 9 (Extensions)

Appendix A

Deadlines Previously Established

Documents not submitted before the effective date of this agreement:

In accordance with Section 8.1 of this Agreement, the following deadlines for submission of Draft Primary Documents have been agreed upon by the Parties before the effective date of this Agreement:

Operable Unit #1 Sites and Schedule

Soils with Data:

- Pest Control Wash Rack Area (Site 3)
- Marine Corps Air Station Drainage Ditch (Site 4)
- Fire Fighter Drill Field (Site 5)
- DPRO Scrap Yard/Building 2241 (Site 6)
- 41 Area Stuart Mesa Disposal Ponds (Site 9)

Draft Work Plan	12/30/90
Draft RI Report	7/15/92
Draft FS Report	11/15/92
Draft Proposed Plan	2/15/93
Draft Record of Decision	7/15/93

Operable Unit #2 Sites and Schedule

Landfills:

- Box Canyon Landfill (Site 7)
- Las Pulgas Landfill (Site 8)
- San Onofre Landfill (Site 14)

Surface Impoundments:

- Concrete Lined Surface Impoundment (Site 4)
- 31 Area LCAC-5 Two Surface Impoundments (Site 19)
- 43 Area Las Pulgas Vehicle Wash Rack Surface Impoundments (Site 20)
- 14 Area Surface Impoundment (Site 21)
- 23 Area Unlined Surface Impoundment (Site 22)

Groundwater:

- Santa Margarita Watershed (Site 15 and other areas)
- Las Flores Creek Watershed

Draft Work Plan	12/30/90
Draft RI Report	1/15/93
Draft FS Report	5/15/93
Draft Proposed Plan	8/15/93
Draft Record of Decision	1/15/94

Operable Unit #3 Sites and Schedule

Soils and Groundwater Basins With No Data:

- Refuse Burning Grounds (Site 1)
- Grease Disposal Pits (Site 2)
- Las Flores Creek (Site 8)
- 26 Area Sewage Sludge Composting Yard (Site 10)
- 22/23 Area, JP-5 Spill (Site 11)
- Assault Vehicle Fueling Area (Site 12)
- Asphalt Plant (Site 13)
- 22 Area Buildings 22151 and 22187 Ditch Confluence and Ditch (Site 16)
- 22 Area Building 22187 Marsh and Ditch (Site 17)
- 13/16 Area Building 1687 Spill and Ditch (Site 18)
- Ground Water Basins Other than Santa Margarita and Las Flores

Sites Requiring RI Work Based on the RFA:

- Solid Waste Management Units
- Sewer Lines
- Underground Storage Tanks

Draft Work Plan	12/30/90
Draft RI Report	9/15/93
Draft FS Report	1/15/94
Draft Proposed Plan	4/15/94
Draft Record of Decision	9/15/94

Schedule for RFA

Draft Preliminary Report (secondary document) 5/15/91
Draft RFA (secondary document) 2/15/92
Draft RI Workplan (primary document) 2/15/92
Sites requiring RI/FS effort will be incorporated into Schedule #3 above. The Marine Corps will make best efforts to meet this deadline for all RFA sources. However, if all sites cannot be addressed in the RI/FS for OU #3, per Section 29 of the FFA, a schedule for the remaining sites will be negotiated by the Parties.

Note:

Work Plans include QAPPs, SAPs and CRPs; RI Reports include Risk Assessments, FS Reports include treatability study results; Draft RODs include Responsiveness Summaries.

Appendix B
Outline of Topics to Be Addressed In
The Remedial Investigation/Feasibility Study
And Related Reports

The following outlines list 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.

- 1.0 RI/FS Work Plan**
 - Executive Summary**
 - 1. Introduction**
 - 2. Site Background and Setting**
 - 3. Initial Evaluation**
 - 3.1 Types and Volumes of Waste Present**
 - 3.2 Potential Pathways of Contaminant Migration/Preliminary Public Health and Environmental Impacts**
 - 3.3 Preliminary Identification of Operable Units**
 - 3.4 Preliminary Identification of Response Objectives and Remedial Action Alternatives**
 - 4. Work Plan Rationale**
 - 4.1 Data Quality Objectives**
 - 4.2 Work Plan Approach**
 - 5. RI/FS Tasks**
 - 6. Costs and key assumptions**
 - 7. Schedule (including Operable Units)**
 - 8. Project Management**
 - 8.1 Staffing**
 - 8.2 Coordination**
 - 9. References**
 - Appendices**

- 2.0 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**

- 3.0 Sampling and Analysis 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

- 4.0 Community Relations Plan
 - 1. Overview of Community Relations Plan
 - 2. Capsule Site Description
 - 3. Community Background
 - 4. Highlights of Program
 - 5. Techniques and Timing

- Appendices

- 5.0 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
 - 1.3 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 Surface-water and Sediment Investigations
 - 2.1.5 Geologic Investigations
 - 2.1.6 Soil and Vadose Zone Investigations
 - 2.1.7 Ground Water Investigations
 - 2.1.8 Human Population Surveys
 - 2.1.9 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

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
 - 4.1.2 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
- 6.0 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, ecology 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

4.2.2 Alternative 2

4.2.2.1 Description

4.2.2.2 Assessment

4.2.3 Alternative 3

4.3 Comparative Analysis

Bibliography

Appendices

- 7.0 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 response actions. 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
 4. Preparing a brief report documenting the results of the testing

Appendix C
All Final Primary and Secondary Documents
Which Will Be Created
In Accordance With Section 7 (Consultation)

(To be incorporated by reference)

Appendix D

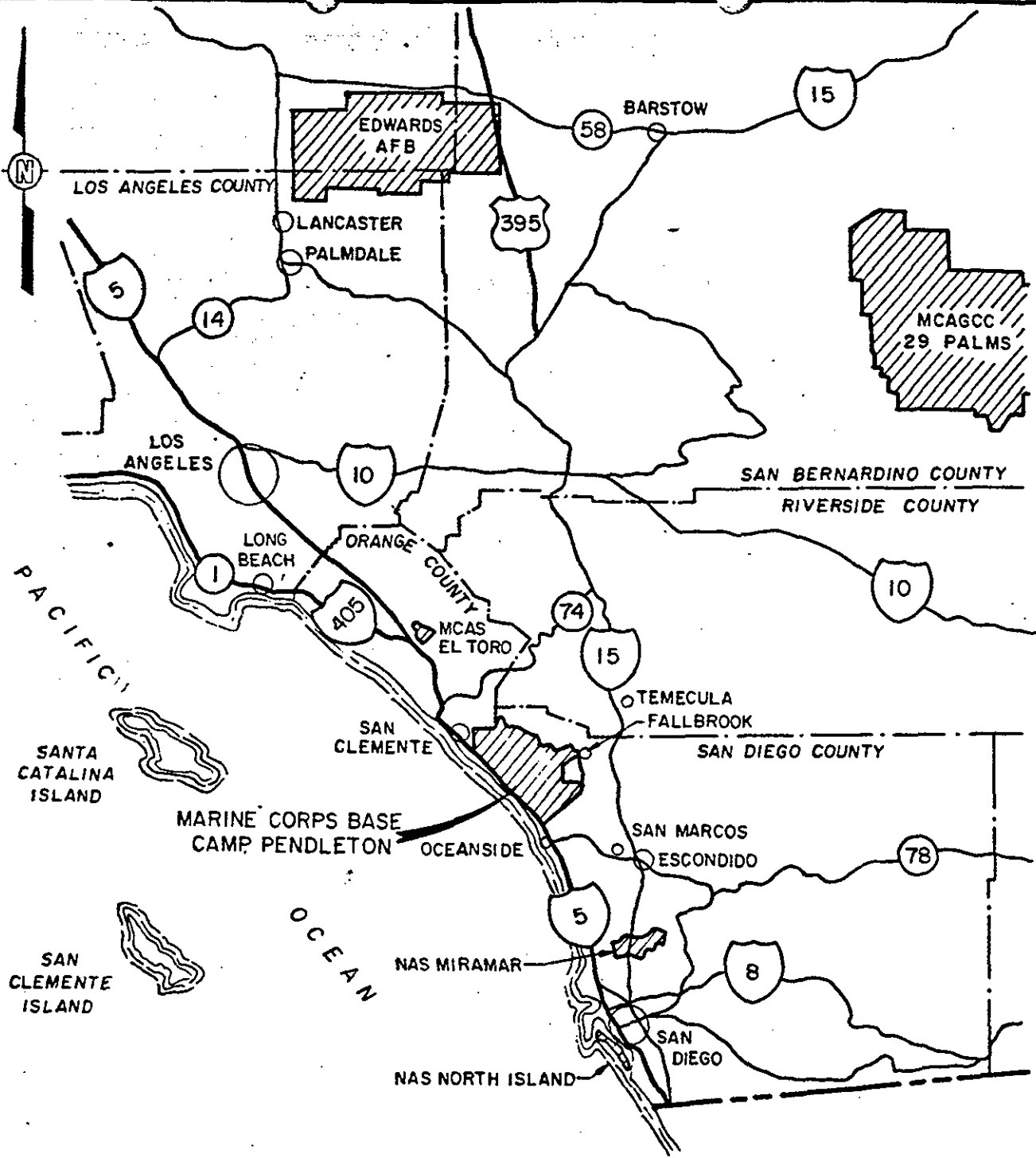
**All Deadlines Which Will Be Established In
Accordance With Section 8 (Deadlines) and Which
May Be Extended in Accordance With Section 9 (Extensions)**

(To be incorporated by reference)

Attachments

- A) Site Maps**
- B) Chemicals of Concern**
- C) Statement of Facts**
- D) IRP Activities**

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 CHECKED BY [initials]
 APPROVED BY [initials]
 BJB 3-8-90
 DRAWN BY



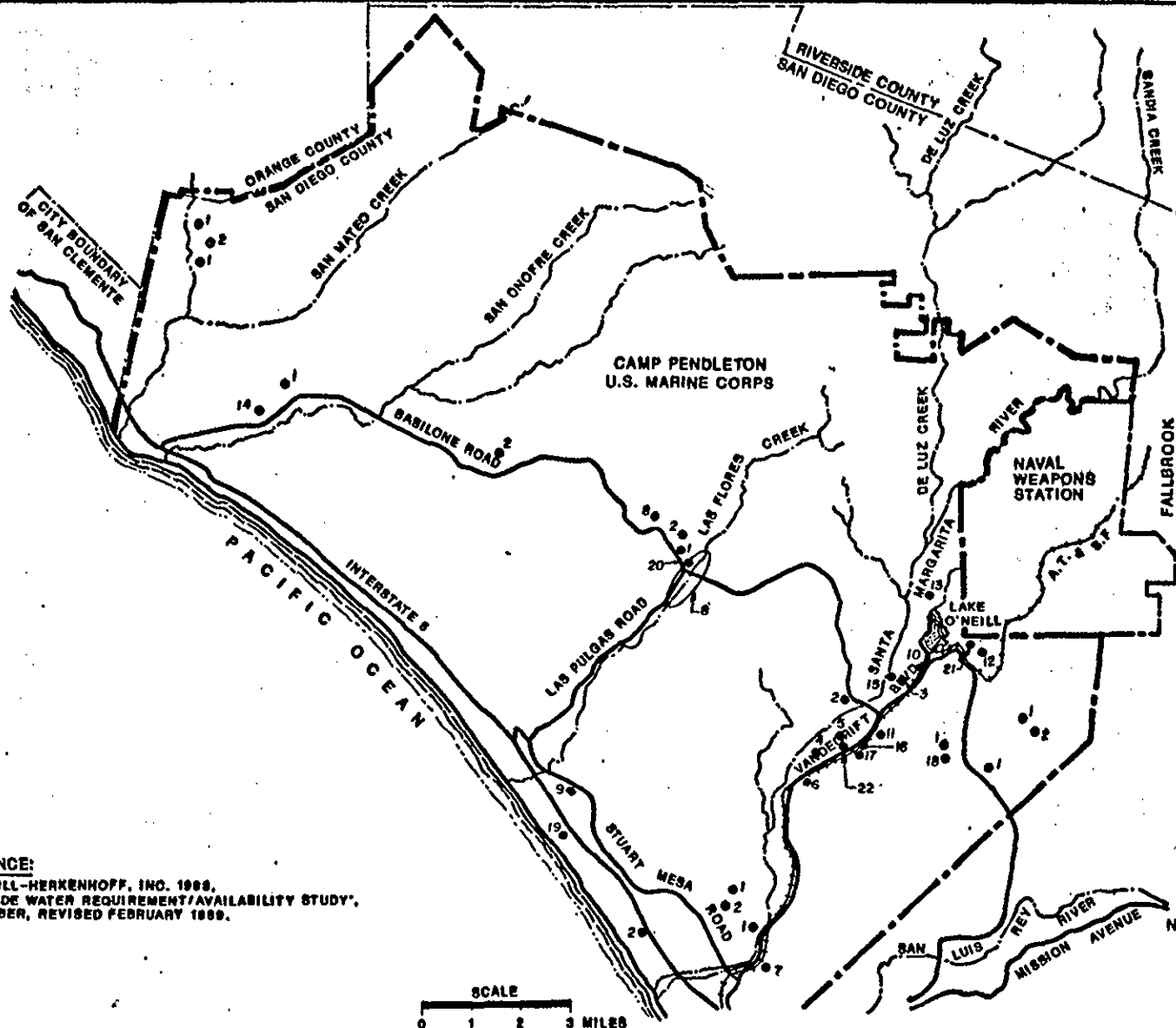
REFERENCE:
 SCS ENGINEERS, INC.,
 INITIAL ASSESSMENT STUDY,
 MARINE CORPS BASE,
 CAMP PENDLETON, CALIFORNIA, JUNE 1984

LOCATION MAP
 MCB CAMP PENDLETON
 CALIFORNIA
 CTO #0012

PREPARED FOR
 NAVAL FACILITIES ENGINEERING COMMAND
 SOUTHWEST DIVISION
 CONTRACT N68711-89-D-9296
 CLE-101-01F0012-R2-0001



DRAWN BY: B.W. CHECKED BY: J.M. APPROVED BY: J.M.
 8-1-90 243012-B3
 DRAWING NUMBER



LEGEND:

- SITE NUMBER AND LOCATION
- SITE NO. 1 DEFENSE BARRIERS GROUNDS
- SITE NO. 2 GRADE DISPOSAL PITS
- SITE NO. 3 PEST CONTROL WASH RACK AREA
- SITE NO. 4 HEAP DRAINAGE DITCH AND CONCRETE-LINED SURFACE IMPROVEMENT
- SITE NO. 5 FIREFOUGHTER WRESTLING FIELD
- SITE NO. 6 BPO SCRAP TANK AND BUILDING 2241
- SITE NO. 7 BOX CANYON LANDFILL
- SITE NO. 8 LAS PULGAS LANDFILL AND LAS FLORES CREEK
- SITE NO. 9 41 AREA STONY MESA WASTE STABILIZATION POND
- SITE NO. 10 45 AREA SEWAGE SLUDGE COMPOSTING YARD
- SITE NO. 11 20 AND 23 AREAS JP-5 FUEL SPILL
- SITE NO. 12 ASSAULT VEHICLE FUELING AREA
- SITE NO. 13 ASPHALT PLANT
- SITE NO. 14 SAN ONOFRE LANDFILL
- SITE NO. 15 GROUND-WATER STUDY IN THE VICINITY AND DOWNGRADEMENT OF SITE 3
- SITE NO. 16 28 AREA BLDG. 22151 AND 22187 DITCH COMPLIANCE AND DITCH
- SITE NO. 17 22 AREA BLDG. 22187 BURNISH AND DITCH
- SITE NO. 18 13214 AREA BLDG. 1087 SPILL DITCH
- SITE NO. 19 31 AREA LCAC-5 TWO SURFACE IMPROVEMENTS
- SITE NO. 20 43 AREA LAS PULGAS VEHICLE WASH RACK
- SITE NO. 21 14 AREA SURFACE IMPROVEMENT
- SITE NO. 22 23 AREA WASTED SURFACE IMPROVEMENT

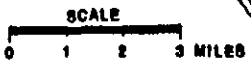
RIF/S SITES
 MCB CAMP PENDLETON
 CALIFORNIA

PREPARED FOR

NAVAL FACILITIES ENGINEERING COMMAND
 SOUTHWEST DIVISION
 CONTRACT N68711-89-D-9288
 C.I.E. 101F012-R2-0027



REFERENCE:
 LEEDSHILL-HERKENHOFF, INC. 1988,
 "BASEWIDE WATER REQUIREMENT/AVAILABILITY STUDY",
 SEPTEMBER, REVISED FEBRUARY 1989.



137773

Do Not Scale This Drawing

**Attachment B
Toxicity of Substances Detected**

This list includes all chemicals of concern known at the time of this agreement. This list may change as the Remedial Investigation proceeds. The chemicals presented here were identified through limited sampling or through documentation which was not conclusive. The presence or absence of these chemicals and any additional chemicals will be confirmed during the remedial investigation.

Any risk posed by the listed chemicals will be fully described in a Risk Assessment report to be prepared as a secondary document to this agreement.

In addition the descriptions of the toxic affects of the listed chemicals at the site are for reference only and should not be interpreted as describing absolute effects on any individual person.

Metals:

Arsenic 7740-38-2¹:

- Acute - ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, irritation, hyperpigmentation of skin
- Chronic - respiratory system, cardiovascular system, skin, eyes, liver and kidney damage, lymphatic system, human carcinogen

Cadmium 7440-43-9:

- Acute - irritation of throat and nose, headache, shortness of breath respiratory, kidneys, pulmonary edema, gastrointestinal tract effects - sudden nausea, vomiting, diarrhea, abdominal pain
- Chronic - emphysema, pulmonary edema, marked lung changes, human carcinogen

Chromium 7440-47-3:

- Acute - skin irritation
- Chronic - fibrosis of lungs, cancer of lungs, nasal cavity, paranasal sinus

Copper 7440-50-8:

- Acute - mucus membrane irritant, pharynx, nasal perforation, eye irritant, metal taste, dermatitis
- Chronic - rarely reported and then only in individuals with Wilson's disease

Lead 7439-92-1:

- Acute - lassitude, insomnia, pallor, eye grounds, anorexia, weight loss, malnutrition, constipation, abdominal pain, colic, hypotense, anemia, gingival lead line, tremors, wrist paralysis
- Chronic - gastrointestinal tract, central nervous system (CNS), blood, kidneys, gingival tissue

1. The Chemical Abstracts Service Registry Number ("CAS") is a numeric designation assigned by the American Chemical Society's Chemical Abstracts Service and uniquely identifies a specific chemical compound. This entry allows one to identify a substance regardless of the name or naming system used.

Mercury 7439-97-6:

- Acute - gastrointestinal tract effects - diarrhea, constipation, ulceration of mouth and gums, dermatitis, stomatitis, tremors, dryness of mouth and throat, and phisic disturbances
- Chronic - gingivitis, tremor, phisic disturbances

Nickel 7440-02-0:

- Acute - sensitization dermatitis, allergic asthma, nasal cavities, pneumonitis
- Chronic - lung cancer

Zinc 7440-66-6:

- Acute - nose irritation, throat, cough, copious sputum, dyspnea, chest pain, pulmonary fibrosis, pulmonary edema, bronchitis pneumonia, cor pulmonale, fever, cyanosis, tachypnea, burns skin and eyes
- Chronic - respiratory system

Pesticides and Herbicides:

Bromacil 314-40-9:

- Acute - eye, nose, throat and skin irritation; gastrointestinal effects - nausea, vomiting and diarrhea
- Chronic - none reported

Chlordane 57-74-9:

- Acute - CNS, neurological symptoms, loss of appetite, respiratory failure, tremors, convulsions, anorexia
- Chronic - degenerative changes in liver and kidneys

4,4-DDD 72-54-8:

- Acute - nausea, dizziness, headache, vomiting, restlessness, disorientation, weakness, twitching eyelids, apprehension, parathesiae, convulsions, tremor, coma, and respiratory failure
- Chronic - DDD is a metabolite of DDT and has been identified as a potential human carcinogen

4,4-DDE 72-55-9:

- Acute - nausea, dizziness, headache, vomiting, restlessness, disorientation, weakness, twitching eyelids, apprehension, paresthesia, convulsions, tremor, coma and respiratory failure
- Chronic - hepatomas, DDE is a metabolite of DDT and has been identified as a potential human carcinogen

4,4-DDT 50-29-3:

- Acute - vomiting, great discomfort, moderate neurological changes including paresthesia, tremor, moderate ataxia, headache, and fatigue
- Chronic - has been identified as a potential human carcinogen

2,4-DB 94-82-6:

- Acute - burning of the throat and chest, weakness, stiffness in upper extremities, skin, respiratory, and throat irritant, headache, mild eye tiredness
- Chronic - none reported

Disulfoton 289-04-4:

Acute - anorexia, headache, dizziness, weakness, anxiety, nausea, salivation, laceration, abdominal cramps, vomiting, perspiration, slow pulse, muscle tremors, diarrhea, pinpoint nonreactive pupils, respiratory difficulty, pulmonary edema, cyanosis, loss of sphincter control, convulsions, coma, death, hypoglycemia, and pancreatitis

Chronic - cholinesterase inhibition

Diuron 64-17-5:

Acute - eye, throat, and skin irritation; gastrointestinal tract effects - nausea, vomiting, and diarrhea

Chronic - none reported

Ethyl Parathion 56-38-2:

Acute - anorexia, nausea, vomiting, diarrhea, excessive salivation, pupillary constriction, bronchoconstriction, muscle twitching, convulsions, coma, respiratory failure

Chronic - reduces cholinesterase level, dangerous additive effects

Methyl Parathion 298-00-0:

Acute - irreversible cholinesterase inhibition resulting in anorexia, headache, dizziness, weakness, anxiety, nausea, salivation, lacrimation, abdominal cramps, vomiting, perspiration, slow pulse, muscle tremors, diarrhea, pinpoint nonreactive pupils, respiratory difficulty, pulmonary edema, cyanosis, loss of sphincter control, convulsions, coma, death, hypoglycemia

Chronic - cholinesterase inhibition

2,4,5-TP (Silvex) 93-72-1:

Acute - moderate to severe chloracne, porphyria, weakness to numbness of the arms and legs

Chronic - long-term nerve damage, fetotoxic, teratogenic and carcinogenic effects

Inorganic compound:

Asbestos 1332-21-4:

Acute - none reported

Chronic - highly toxic by inhalation of dust particles, lung cancer, mesothelioma, asbestosis, gastrointestinal malignancies

Organic compounds:

Acetone 67-64-1:

Acute - eye effects - irritation, diplopia, cataracts, eye ground blindness by affecting the eye or the optic nerve; skin irritant, CNS, headache

Chronic - none reported

Benzene 71-43-2:

Acute - eye, nose, and respiratory system irritation, giddy, headache, nausea, staggered gait, fatigue, anorexia, lassitude, dermatitis, bone marrow depressant, abdomen pain

Chronic - CNS, skin irritant, suppresses bone marrow function causing blood changes, leukemia

2-Butanone, MEK 78-93-3:

- Acute - skin, nose, throat and eye irritation, headaches, dizziness and dermatitis
- Chronic - none reported

Butanol 71-36-3:

- Acute - moderate irritation effects to the eyes, nose, and throat; corneal inflammation, slight headache and dizziness, dermatitis, keratitis
- Chronic - hemolysis, hemoglobinuria

Carbon Disulfide 75-15-0:

- Acute - CNS, intoxication, depression, restlessness, unconsciousness, narcosis, nausea, vomiting, headache, death, skin irritation
- Chronic - CNS, neuritis and disturbance of vision, wasting of the muscles, excitation or depression, Parkinsonian paralysis and insanity

Chlorobenzene 108-90-7:

- Acute - skin, eye, and nose irritation; narcotic, somnolence, loss of consciousness, twitching of extremities, cyanosis, rapid respirations, irregular pulse
- Chronic - respiratory system, CNS, kidney and liver damage

Dichlorobenzene 95-50-1:

- Acute - eye and skin irritant and mucus membrane, liver and kidney damage
- Chronic - carcinogenic, liver and kidneys

Dibromochloromethane 124-48-1:

- Acute - mucous membrane, skin, lung and cornea irritation, liver and kidney damage, CNS effects, death
- Chronic - currently under test by the National Cancer Institute as a carcinogen

1,1 - Dichloroethane, (DCA) 75-34-3:

- Acute - skin, eye, and throat irritant, CNS depression, drowsiness, unconsciousness, liver and kidney damage
- Chronic - CNS depression; skin, eye, and throat irritant; liver and kidney damage

1,1 - Dichloroethene, (DCE) 75-35-4:

- Acute - skin, eye, and throat irritant, CNS depression
- Chronic - CNS depression; skin, eye, and throat irritant

trans - 1,2 - Dichloroethene 156-60-5:

- Acute - CNS depression and unconsciousness, drowsiness, dizziness, mucous membrane, skin, lung and corneal irritation, unconsciousness
- Chronic - none reported

Ethanol 64-17-5:

- Acute - CNS depression, reduced inhibitions, eye irritation, visual impairment, muscular incoordination, impaired judgement, drowsiness, headache, slurring of speech, unconsciousness, slowed respiration, complete loss of sensation, coma, death
- Chronic - general weight loss, cirrhosis of the liver, gastroenteritis with anorexia and diarrhea, polyneuritis with pain and sensory loss in the extremities, optic atrophy, mental deterioration with memory loss, tremor, impaired judgement, impairment or loss of other abilities

Ethylbenzene 100-41-4:

- Acute - skin, nose, throat, and eye irritant; weakness, dizziness, CNS depression, coma
- Chronic - kidney disease, liver disease, respiratory disease, skin disease, coma

Freon 113 76-13-1:

- Acute - irritation to the eyes and throat; drowsiness, high doses may cause the heart to beat irregularly or to stop
- Chronic - none reported

4 - Methyl - 1,2 - Pentanone (MIBK) 108-10-1:

- Acute - eye, nose, and throat irritant, CNS depression, weakness, headache, nausea, light headedness, vomiting, dizziness, incoordination, respiratory irritation
- Chronic - none reported

Methylene Chloride 75-09-2:

- Acute - fatigue, weakness, sleepiness, light-headedness, limbs numb, tingle, nausea, irritated eyes and skin, vertigo, worsen angina, coma
- Chronic - liver and kidney damage

Naphthalenes 91-20-3:

- Acute - nausea, headache, diaphoresis, hematuria, fever, anemia, liver damage, vomiting, convulsions, and coma
- Chronic - liver damage, convulsions, and coma

Pyrene 129-00-0:

- Acute - Headache, mental confusion, visual disturbance, photo sensitization, dermatitis characterized by itching, redness, scaling, weeping and crusting; corneal irritation and lense opacities
- Chronic - potential carcinogen via skin absorption

Styrene 100-42-5:

- Acute - skin, eye, and nose irritant, weakness and stupor, followed by incoordination, tremors and unconsciousness
- Chronic - none reported

1,1,1 - Trichloroethane, TCA 71-55-6:

- Acute - psychotropic effects, gastrointestinal tract effects, diarrhea, constipation, ulceration, CNS, moderate skin irritation, severe eye irritation, sensitizes the heart to epinephrine,
- Chronic - psychic effects, gastrointestinal tract effects, CNS, liver and kidney damage

1,1,2 - Trichloroethane, TCA 79-00-5:

- Acute - moderate skin and severe eye irritation, liver and kidney damage
- Chronic - carcinogenic and mutant effects, liver and kidney damage

Tetrachloroethene, PCE 127-18-4:

- Acute - irritation to the eyes, nose, and throat; CSN depression, hepatic injury and anesthetic death, malaise, dizziness, headache, increased perspiration, fatigue, staggering gait, and slowing of mental ability
- Chronic - liver and kidney damage, upper respiratory system, CNS, carcinogenic

Trichloroethene, TCE 79-01-6:

- Acute - irritation to the eyes, nose and throat, headache, vertigo, tremors, intoxication, sleepiness, nausea, vomiting, dizziness and coughing, CNS depression
- Chronic - liver and kidney damage, paresthesia, carcinogenic

Trichlorofluoromethane 75-69-4:

- Acute - incoordination, tremors, dermatitis, frostbite, cardiac arrhythmias, cardiac arrest
- Chronic - cardiovascular system, skin irritant

Toluene 108-88-3:

- Acute - fatigue, weakness, confusion, euphoria, dizziness, headache, dilated pupil, lacrimation, nervousness, muscle fatigue, insomnia, paresthesia, dermatitis, photophobia
- Chronic - none reported

Vinyl Chloride 75-01-4:

- Acute - weakness, abdomen pain, gastrointestinal bleeding, hepatomegaly, pallor or cyanosis of extremities, death
- Chronic - liver, CNS, blood, liver cancer, excess cancer of the lung and lymphatic and nervous systems, tumors

Xylene 1330-20-7:

- Acute - nose, eye, and throat irritant, dizziness, drowsiness, unconsciousness, nausea, vomiting, kidney and liver damage
- Chronic - eye damage

PCB's:

PCB's 1336-36-3:

- Acute - moderate skin irritant, suspected carcinogen, liver damage, vomiting
- Chronic - skin irritant, suspected carcinogen, liver, nausea, vomiting, loss of weight, jaundice, edema, and abdominal pain

Phenols:

Total Phenols 108-95-2:

- Acute - skin, eye irritant, carcinogenic, CNS, headaches, dizziness, muscular weakness, dimness of vision, ringing in the ears, rapid breathing, loss of consciousness, death, vomiting, difficulty in swallowing, diarrhea
- Chronic - digestive disturbances, nervous disorders, headache, fainting, mental disturbances, kidney and liver damage, edema of lungs, pancreas and spleen

References

- (1) "Toxicity of Substances Detected", Fort Ord
- (2) Dangerous Properties of Industrial Materials, Sixth Edition, N. Irving Sax, (1984)
- (3) The Merck Index, Eleventh Edition, (1989)
- (4) Hawley's Condensed Chemical Dictionary, Eleventh Edition, Revised by N. Irving Sax and Richard J. Lewis, Sr., (1987)
- (5) Farm Chemicals Handbook, (1990)
- (6) Occupational Health Hazard Guidelines for Chemical Hazards, DHHS (NIOSH) USGPO, (1978)
- (7) Documentation of Threshold Limit Values and Biological Exposure Indices, ACGIH, Fifth Edition, (1990)
- (8) CHRIS Chemical Hazard Data, USCG Comdant Inst., M16465.12 (1978)
- (9) Handbook of Poisoning, R.H. Driesback and W.O. Robertson, Appleton Lang Publishing, Twelfth Edition, (1987)

Attachment C
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 person for purposes unrelated to this Agreement.

The data presented herein were either gathered through limited sampling or through documentation which was not conclusive. The accuracy of these data will be substantiated during the Remedial Investigation phase.

1. Marine Corps Base (MCB) Camp Pendleton comprises approximately 125,000 acres of land, located almost entirely in San Diego County, California. Camp Talega, near the northwestern border of MCB Camp Pendleton extends into Orange County. The base is skirted on the west by the Pacific Ocean. Surrounding communities include San Clemente to the northwest, Oceanside to the south and Fallbrook to the east. MCB Camp Pendleton occupies land acquired in 1941 by the Department of the Navy from holdings previously known as Rancho Margarita y Las Flores. The land was acquired for use as an ammunition depot. Early in 1942, the Navy began proceedings to develop the land as a Marine Corps training area. Construction started in March 1942 and MCB Camp Pendleton was designated as a permanent base in October 1944. The mission of MCB Camp Pendleton is to provide housing, training facilities, and logistical and administrative support for Fleet Marine Force Units, Marines and Recruits. Land adjacent to MCB Camp Pendleton is zoned residential, rural, or agricultural, except for the Cleveland National Forest to the north and the Seal Beach Naval Weapons Station, Fallbrook Annex to the east. MCB Camp Pendleton is the last large plot of undeveloped property in the Southern California coastal area.

2. Waste generation operations at this site included maintenance and repair of vehicles, including trucks, tanks, and aircraft. These operations are limited to first and second echelon maintenance work. Third echelon maintenance or the complete overhaul work and major painting are performed at other bases. Vehicular fluids and solvents are the principal wastes generated by MCB Camp Pendleton. Base support activities, including pest control, dry cleaning, audiovisual, hobby shops, and the hospital also generate wastes. Some of the generated wastes are suspected to be disposed of in landfills, drainage ditches, surface impoundments, scrapyards, fire fighting drill areas, refuse burning grounds, grease disposal pits, pesticide equipment rinse areas, waste stabilization ponds for sewage treatment, oily landfarm operations, sewage sludge composting yards, an as-

phalt plant, and others. Sites resulting from these operations that have been identified thus far are included in this Attachment.

The principal wastes known at this time include spent oils, fuels, solvents, pesticides, metals and PCB's. Chemicals detected in the sampling that has been done to date are identified in Attachment B of this Agreement. Further effort is needed during the RI/FS to refine/verify this set of chemicals and to determine the extent of contamination, potential receptors, ARARS and cleanup goals.

3. Under the Installation Restoration Program, an Initial Assessment Study (IAS) was completed in September 1984, and a Site Investigation (SI) in July 1988. Camp Pendleton went final on the National Priorities List (NPL) in November 1989. RI/FS scoping began in September 1989. Currently the Navy, under its CLEAN Contract, is at the planning phase, preparing the RI/FS Workplan, Quality Assurance Project Plan, Sample Plan and Community Relations Plan.
4. Camp Pendleton is in a rich environmental setting with coastal area, stream/riparian/wetland habitat, a potable groundwater supply supporting a large base population, and acres of open space providing ecological value. Therefore, coordination with the natural resources trustees and assessment of environmental impacts and risks will be important at this site.
5. Work under the Installation Restoration Program identifies and describes sites requiring investigation under the RI/FS. The San Diego Regional Water Quality Control Board has also identified sites under the Toxic Pits Control Act and the Calderon Act which may be incorporated into the RI. Sources that require Corrective Action under the RCRA/CERCLA integration provision of this Agreement, or those where hazardous substances have been released from underground storage tanks need to be identified and included in the RI/FS. Based on work done to date, sites identified thus far are listed below. (Site descriptions are for the most part taken from IRP reports identified in Attachment D.) Note that in the following descriptions of constituent levels, ug is used to denote micrograms.

Site 1 - Refuse Burning Grounds: This site consists of nine refuse burning grounds (Sites 1a, 1b, 1c, 1d, 1e, 1f, 1g, 1h and 1i) scattered throughout the base. Activities related to the generation, handling, and disposition of hazardous material and wastes at these burning grounds were not documented. Between the late 1960's and 1972, the burning pits were closed, covered with native soil and allowed to revert to their natural state. Recent studies done elsewhere on ash from municipal waste have indicated high concentrations of toxic metals, proving, even if only nonhazardous wastes were burned, the remaining ash might be hazardous. In addi-

tion, covering the ash with several feet of soil does not prevent downward movement of the metals or other contaminants with soil moisture.

Site 2 - Grease Disposal Pits: Site No. 2 consists of seven mess hall grease disposal pits (2a, 2b, 2c, 2d, 2e, 2f and 2g) scattered around the base. The pits were closed and backfilled with native soil. Nonkitchen or nonfood wastes may have been disposed of in these pits. Visual inspection of a grease disposal pit (the pit near Area 41) found the surrounding vegetation to be distressed.

Site 3 - Pest Control Wash Rack Area: The Pest Control Wash Rack Area, located in the upper subbasin of the Santa Margarita River Basin was used from the 1950's to 1980 for rinsing pesticide application tanks and other equipment and for the disposal of leftover pesticide solution. An estimated 25,000 to 300,000 gallons of diluted pesticide solution was disposed at the site. The solution was discharged via a corrugated steel culvert to an unlined ditch excavated in the alluvium. In 1980, two water-supply wells in the area were found to be contaminated with the herbicide 2,4,5-TP (Silvex) at concentrations of 51 ug/l and 73 ug/l. Subsequent sampling three months later did not detect pesticide or herbicide contamination.

Sampling and analysis performed during the Confirmation Study confirmed the presence of pesticides and herbicides in surface soils of several subareas of this site. Also, based on elevated levels of several heavy metals and fuel hydrocarbons, another contamination source was identified in surface soils of the main ditch. Evidence of pesticide or herbicide contamination in ground water could not be concluded. Arsenic, chromium and zinc were detected in ground water monitoring wells at barely detectable levels.

Site 4 - MCAS Drainage Ditch and Concrete Lined Surface Impoundment: Approximately 29 feet wide by 5 feet deep, this drainage ditch, located in the Chappo subbasin of the Santa Margarita River Basin, has been used for the disposal of liquid wastes generated from flight line operations since the 1940's. Most of the waste disposal activities probably took place during the 1960's and 1970's. An estimated 11,000 to 25,000 gallons of jet fuel, kerosene, paints, toluene, solvents, lacquers, thinners, etc., were discharged into or adjacent to the ditch prior to 1982. The discharge of other liquid wastes (oils, battery electrolyte solutions, hydraulic fluid, etc.) was also confirmed, but quantities could not be estimated. The area has a shallow water table, relatively permeable sediments, and large-capacity water-supply (production) wells in the vicinity.

Sediment and subsurface soil contamination by organic and inorganic pollutants appeared in several samples, mostly confined to the main MCAS drainage ditch, as opposed to the parallel ditch. One of the most highly contaminated sedi-

ment samples in the main ditch was located up gradient from all apparent flight line operations, suggesting an unrelated pollution source north of the area.

Volatile aromatic and halogenated compounds were found in the subsurface soils at depths of up to 11 feet and therefore, represent a potential treat to ground water in the area. Results of ground water sampling in the area of the MCAS ditch were inconclusive with respect to contamination verification, due to concentrations near detection limits.

Site 4 has been expanded to include the Concrete Lined Surface Impoundment at the request of the RWQCB. Analytical work performed by Dames and Moore in July 1990 (in response to RWQCB letter of August 14, 1989), indicated the presence of TRPH at 600 mg/kg in sludge, and acetone at 26 ug/l and TDS of 1,560 mg/l in liquid as the main constituents in this impoundment.

Site 5 - Firefighter Drill Field: The Firefighter Drill Field is located in the alluvium of the Chappo subbasin. A triangular-shaped, grassy area occupying the center of the air field contains an unlined circular burn pit (more than one may be present) that was used to train firefighters in the suppression of fuel and oil fires from the late 1940's (or early 1950's) to 1981. The pit was also frequently used to store fuels and other flammable liquids between burns. An estimated 280,000 to 850,000 gallons of liquid waste was disposed of in the burn pit. In addition, a slightly toxic, nonbiodegradable firefighting foam and a biodegradable protein foam were used in the pit.

Soil sampling confirmed the presence of hydrocarbon contamination to a depth of 17 feet (maximum boring depth). Contamination was indicated by the presence of fuel hydrocarbons as well as volatile BETX compounds. The presence of these compounds at depth represents a threat to ground water underlying the site, although firm evidence of existing ground water contamination was not obtained during the site investigation. Surface water samples were not collected.

Site 6 - Defense Property Re-utilization Office (DPRO) Scrap Yard: The DPRO scrap yard is situated in the Chappo subbasin, slightly northeast of where the basin narrows from a width of 2 miles to less than 1/2 mile. The Ysidora subbasin of the Santa Margarita River Basin is located south of the narrows area. The scrap yard was operated from the early 1950's to 1979 and was divided into four separate areas based on the types of materials handled or disposed of. From west to east, the areas are as follows:

1. Former PCB spreading area - Electrical transformers were dismantled and the dielectric fluid (containing PCB's) was spread in the vicinity of the work area as a dust control measure. It is estimated that between 1,000 and 2,000 gallons of dielectric fluid was disposed of in the area.
2. Former wood burning area - Flammable liquids such as fuels, solvents, and paint thinners were used as igniter fluids at the site.
3. Former battery electrolyte disposal area - An estimated 500 to 2,000 gallons of battery electrolyte solution was disposed of at the site.
4. Former hazardous waste drum storage area - Storage of drummed liquid hazardous waste (solvents, hydraulic fluids, thinners, chemical cleaners, etc.) resulted in spillage. The drums were subsequently removed and the top 6 inches of contaminated soil excavated from an area of about 10,000 square feet.

During the Confirmation Study, the presence of contamination in varying degrees was confirmed at the DPRO site. Several "hot Spots" with fairly high levels of organic and inorganic contamination were found.

Ground water contamination by organic solvents was confirmed in the immediate vicinity of building No. 2241. A source for the contamination could not be determined with available data. Because the confirmed contamination is apparently unrelated to scrap yard activities, the Building No. 2241 area was recommended for further study. Site No. 6 has been expanded to include building No. 2241.

Site 7 - Box Canyon Landfill: Box Canyon Landfill operations began in 1974 and continued until 1984. The site received both domestic and construction refuse (Group 2 Solid Wastes) totaling approximately 250,000 cubic yards. In addition to Group 2 Solid Wastes, the site is also known to have received hazardous materials, including dry cleaning sludge, contaminated soil containing fuels, petroleum and oil lubricants (POLs), solvents, thinners, paint wastes and chemical cleaners, airfield dumpster wastes containing solidified paints and thinners, strippers, epoxies, and sealants. Estimates for the amounts of these wastes received by the landfill are 2,300 gallons of liquid waste and 1,000 cubic yards of solid waste.

Site 8 - Las Pulgas Landfill and Las Flores Creek: The 43 acre Las Pulgas Landfill's operations began in 1971 and are expected to continue until 2010. The site received both domestic and demolition debris until 1974 and various hazardous wastes until 1978. The site currently contains an estimated 16,000 cubic yards of waste material, consisting primarily of demolition debris. The following hazardous materials have been identified at the site: demolition

debris containing asbestos and pentachlorophenol treated wood, ordnance, paints, paint thinner, epoxies, sealants and hospital wastes. The landfill is located in the upper reaches of the Las Flores Creek Basin.

Data from sampling of three deep wells and one shallow well in the area of Las Pulgas landfill confirmed the presence of organic pollutants in the ground water. Poor water quality in shallow wells and the presence of several organic constituents, including vinyl chloride also had been established. It is likely that landfill leachate has contaminated the underlying ground water. RI/FS studies will better define the nature and extent of contamination in this area.

A 1984 survey of water in Las Flores creek showed that the conductivity of water in the creek downstream from the Las Flores Landfill was more than double the conductivity at the previous upstream sampling station suggesting that the water contains contaminants. Site 8 has been expanded to include the creek study.

Site 9 - 41 Area Stuart Mesa Waste Stabilization Pond: The 41 Area waste stabilization pond, located south of Stuart Mesa, consists of an engineered earthen impoundment and adjacent areas. Pond operations began sometime during 1963 and terminated in 1974 or 1975. During that time, the site was an active sewage treatment facility handling wastes generated in 41 Area. In 1975, a wet well and lift station were installed and raw sewage was pumped to a treatment facility in 41 Area. The sewer line to the stabilization pond and the outfall pipe in the pond were left in place as an emergency backup system.

Since the pond was removed from service, it reportedly has been used for stockpiling of contaminated soils (probably mostly fuel and oil contamination) and disposal of mess hall grease trap wastes. Visual inspection of the area shows that unauthorized dumping of waste oils and possibly other liquids has also taken place. Oily residues from on-base oil/water separators (greater than 95% water) have been transported to unspecified locations in Area 41 since the 1950's. These residues were dried in drying beds and/or were land farmed. Separator pumpouts were not performed on a regular basis; therefore, disposal volumes could not be estimated. In addition to oily residues trucked from other areas, tank maintenance at Area 41 generates waste oils and oil-water separator wastes. It is possible that some of these wastes found their way into the stabilization pond area.

Evaluation of subsurface soils and groundwater data led to the conclusion that organic contamination has occurred and contaminants may be migrating downgradient. Hydrocarbons are present in high concentrations in shallow soils im-

mediately south of the pond. Contamination may be spreading deeper into the water-bearing zones to the south, based on water level data.

Site 10 - 26 Area Sewage Sludge Composting Yard: This yard is the site of historical composting of sewage sludge. Sewage sludge typically has elevated concentrations of several heavy metals that could contaminate soil. Data is not available yet for these or other sewage sludge composting areas that may exist on the base.

Site 11 - 22 and 23 Areas JP-5 Fuel Spill: Woodward-Clyde Consultants performed a subsurface investigation in the vicinity of the above ground fuel (jet fuel No. 5) storage tanks in 22 and 23 Areas, located at the southwestern corner of the air station, in response to reported spills in both areas. Spillage was reported on the order of 1,500-2,000 gallons, some of which was remediated by excavating contaminated soil in 1984. Soil gas surveys were conducted at 27 locations and soil samples were collected from 9 borings, which were then converted to ground water monitoring wells.

Volatile organic soil contamination levels greater than 25 mg/l were found in the immediate vicinity of the fuel storage tanks, and contamination levels less than 5 ug/l were found a short distance from the tanks. Subsurface contamination was generally not evident. Volatile organics were detected in one of the monitoring wells, MW-9, located 150 feet southwest of the 23 Area storage tank, which has since been relocated. Ground water gradient data indicate that the general direction of ground water flow is to the southwest.

Site 12 - Assault Vehicle Fueling Area (AVFA): The SPCC (Nack & Sunderland, 1985) states that spills and soil contamination were widespread at the AVFA, a 50-foot by 50-foot, sandbagged revetment holding numerous 800 gallon rubber fuel bladders. The location of the site is cross-referenced to Map 17 of the April 1983 MCB Camp Pendleton Map Booklet, but no specific location is given.

MCB Camp Pendleton personnel reported that the hoses and fuel bladders used at the AVFA were carried across the road to a nearby streambed, where they were rinsed and allowed to drip-dry. Both the revetment and streambed will be investigated.

Site 13 - Asphalt Plant: The asphalt plant north of the Naval Hospital purportedly was abandoned. However, the evidence indicates that there is activity at the facility. The boiler plant was operating; personnel were present; and the dispensing tanks (loaders) appeared to be in use, according to information from the SPCC (Nack & Sunderland, 1985). Soil contamination was widespread under each loader. There is a large oil/water separator installed at the plant, but it has not been maintained and is weed-filled. This in-

dicates that the unit is silt-filled and cannot function as designed. The failure of the oil-water separator may have allowed contamination to spread to the ground water.

Site 14 - San Onofre Landfill: San Onofre Landfill operations began in 1974 and are predicted to continue until 2025. The site receives municipal/household wastes and previously accepted municipal and construction wastes. There is no documentation of hazardous material disposal at San Onofre Landfill. Based on water quality analysis done in 1981, a chloride/sulfate ratio of about 3 was reported, indicating the landfill leachate may be causing ground water contamination.

Site 15 - MCB Camp Pendleton Ground Water Study in the Vicinity and downstream of Site No. 3: This study was instigated as a result of detection of 2,4,5-TP at concentrations of 51 ug/l and 73 ug/l in 1980 in potable water wells, 10S/4W-7R2 and 10S/4W-7H2, respectively.

Site 16 - 22 Area Building 22151 and 22187 Ditch Confluence and Ditch: This site received discharge from two oil/water separators. Potential contaminants include POLs and solvents.

Site 17 - 22 Area Building 22187 Marsh and Ditch: This site received discharge from the Building 22187 area. Potential contaminants include POLs, solvents, and corrosives.

Site 18 - 13/16 Area Building 1687 Spill Ditch: This ditch received discharge from two motor pool areas. Potential contaminants include POLs, solvents, and corrosives.

Site 19 - 31 Area LCAC-5 Two Surface Impoundments: These Landing Craft Air Cushion (LCAC) impoundments include two synthetically lined ponds which receive waste water from a concrete paved vehicle operating apron used for the washing of amphibious vehicles. Almgren & Koptionak, Inc., performed analyses on the waste water and sludge in the ponds. According to this analytical work, the waste water contains up to 5,430 mg/l TRPH, 75.3 ug/l 1,1,1-trichloroethane, 4.5 ug/l acenaphthene, 6.75 ug/l anthracene, 13.3 ug/l di-n-butyl phthalate, 69.3 ug/l fluroranthene, 77.7 ug/l phenanthrene, 84.3 ug/l pyrene, and 11.3 mg/l lead.

The sludge contains the following constituents: 3,630 mg/l TRPH, 3,070 ug/kg phenanthrene, 535 mg/kg 2-methylnapthalene, 52 ug/kg napthalene, and 32,700 ug/kg bis(2-ethylhexyl) phthalate. Subsurface contamination has not been addressed.

On March 23, 1990, the RWQCB listed this site as a Toxic Pit requiring a Work Plan for "Cease discharge" and removal of liquid and sludge in compliance with TPCA. The required Work Plan was submitted to the RWQCB on August 22, 1990 for review and approval.

Site 20 - 43 Area Las Pulgas Vehicle Wash Rack Surface Impoundment: This site includes a concrete surface impoundment, the area adjacent to the impoundment, and the washing apron. The impoundment overflowed in the past, and oil-stained soil has been noted along the edges of the impoundment.

Analytic work performed by Dames and Moore in July 1990 (in response to RWQCB letter of August 14, 1989), indicated the presence of TRPH at 7,200 mg/kg, toluene at 12,700 ug/kg, and organic lead (naturally occurring lead) at 0.12 mg/kg in sludge, and bromoform at 3 ug/l and TDS of 710 mg/l in liquid as the main constituents in this impoundment.

Site 21 - 14 Area Unlined Surface Impoundment: This area has an unlined ditch, bermed at both ends, apparently downgradient from three concrete 100,000 gallon underground fuel tanks and was reportedly intended to serve as containment in the event of spillage during filling of the tanks. Regional Water Quality Control Board staff made a visit in August of 1988 and noted dead vegetation in and around standing water in the ditch. There was also a sheen present in the water. The most likely contaminants are petroleum hydrocarbons and organic lead.

On June 19, 1990, the RWQCB listed this site as a Toxic Pit requiring a Work Plan for "Cease Discharge" and removal of liquid and sludge in compliance with TPCA. Analytic work performed by Dames and Moore in July 1990 (in response to RWQCB letter of August 14, 1989), indicated the presence of TRPH at 9,000 mg/kg, anthracene at 10,400 ug/kg, and xylene at 1,500 ug/kg in sludge, and TRPH at 18 mg/l, chloroform at 104 ug/l, acetone at 130 ug/l, and TDS of 8,780 mg/l in liquid as the main constituents in this impoundment. The required Work Plan was submitted to the RWQCB on August 22, 1990 for review and approval.

Site 22 - 23 Area Unlined Surface Impoundment: This impoundment was constructed in 1979 to 1980 and was lined with polyethylene sheet. Fuel bladders were stored in this impoundment in 1985. This impoundment had been receiving fire suppression material discharged through the deluge system located inside the adjacent hangar bays at the MCAS. Marine Corps Base personnel have stated that solvents, cleaners, and aircraft wash water have probably been discharged from the hangars to these basins.

Analytical work performed by Dames and Moore in July 1990 (in response to RWQCB letter of August 14, 1989), indicated the presence of TRPH at 68 mg/kg, acetone at 7,300 ug/kg and chloroform at 8 ug/kg in sludge, and TRPH at 2 mg/l and TDS of 1,150 mg/l in liquid as the main constituents in this impoundment.

RCRA Facility Assessment (RFA) Sites: RFA sites or RCRA Corrective Action sites will include hazardous substance releases from lines carrying industrial waste or impoundments receiving such wastes, leaking hazardous substance underground tanks, and solid waste management units (SWMUs). These sites have not yet been identified.

Base Wide Ground Water Quality Study: In addition to Site 15, the RI/FS will address ground water quality in potentially affected areas of the Santa Margarita River, Las Flores Creek, San Onofre Creek, San Mateo Creek and San Luis Rey watersheds, as needed.

Attachment D
Installation Restoration Activities

In 1976 the Department of Defense (DOD) initiated the Installation Restoration Program (IRP) to evaluate, characterize, and control the potential migration of possible contaminants resulting from past operations and disposal practices on DOD facilities.

The Navy has been actively engaged in the IR program since 1980 when, in response to the DOD IRP, the Navy Assessment and Control of Installation Pollutants (NACIP) Program was instituted. NACIP was conceived as a three-phase process. First, an Initial Assessment Study (IAS) is performed. The IAS identifies sites that may contain pollutants and evaluates the threat posed by each to human health and the environment. Limited sampling during the IAS is recommended for sites where analytical results could help determine whether an NAICP Confirmation Study (CS) is required. Those sites identified in the IAS as having potential problems are further investigated during the second phase, the CS. Sufficient field work is conducted during the CS to verify whether a site poses a threat to human health or the environment. Ideally, the full nature and extent of contamination is determined during the CS, so that the third phase, Corrective Measures Implementation may proceed.

The NACIP Program was replaced by the current IRP in 1983. Since the current IRP was authorized, modifications have been made to include compliance with CERCLA/SARA and use of National Contingency Plan terminology and procedures. As a result of these changes, the Navy now complies with NCP terminology and requirements and follows the EPA Remedial Investigation/Feasibility Study (RI/FS) process.

The two major IRP investigations conducted at MCB Camp Pendleton are documented in the Initial Assessment Study (SCS Engineers, Inc., 1984) and the Site Investigation Report (Camp Dresser and McKee, Inc., 1989).

Documents prepared or being prepared under the IRP, that are not primary or secondary documents, include the following:

- (1) Naval Facilities Engineering Command, Southwest Division, Environmental Survey; Naval Regional Medial Center; December 1981.
- (2) PRC Engineering, Inc., Groundwater Basin Hydrologic and Water Quality Study for MCB Camp Pendleton; October 1983.
- (3) SCS Engineers, Inc., Initial Assessment Study of Marine Corps Base Camp Pendleton, California; July 1984.
- (4) Survey for Nack & Sunderland, Inc., Oil and Hazardous Substances Spill Prevention, Control and Countermeasure

- (SPCC) Field Survey, Report and Plan, MCB Camp Pendleton; July 1985.
- (5) Woodward-Clyde Consultants, Engineering Study/Investigation Areas 22 and 23 JP-5 Fuel Spills; February 1986.
 - (6) Camp Dresser and McKee, Inc., Site Investigation Report, Marine Corps Base, Camp Pendleton California; July 22, 1988.
 - (7) Mittlehauser Corporation, SWAT Water Quality Proposal for Camp Pendleton San Onofre Landfill; August 1989.
 - (8) Mittlehauser Corporation, SWAT Water Quality Proposal for Camp Pendleton Las Pulgas Landfill; August 1989.
 - (9) Mittlehauser Corporation, SWAT Water Quality Proposal for Camp Pendleton Box Canyon Landfill; August 1989.
 - (10) MCB, Camp Pendleton, Installation Restoration Program History; August 1989.
 - (11) Almgren and Koptionak, Inc., Contamination Investigation at the LCAC Water Recycling Facility; October 1989.
 - (12) MCB Camp Pendleton, Construction Drawings of Hazardous Waste Sludge Pit; October 1989.
 - (13) Hydrofluent, Inc., Site Investigation, Air Station 23 Area; January 1990.
 - (14) Jacobs Engineering Group, Inc., Final Summary Report: Installation Restoration (IR) Program, Camp Pendleton Marine Corps Base (CPMCB), San Diego, California; March 1990.
 - (15) Jacobs Engineering Group, Inc., Final Site Management Plan.
 - (16) Jacobs Engineering Group, Inc., Administrative Record Index (to date).
 - (17) Jacobs Engineering Group, Inc., Final General Development Map.
 - (18) Jacobs Engineering Group, Inc., Final Area 41, Stuart Mesa Disposal Ponds HAR Workplan.
 - (19) Jacobs Engineering Group, Inc., Final DPDO HAR Workplan.