

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

IN THE MATTER OF:)	Docket HWCA:P1-01/02-007
TRW INC.)	
One Space Park)	CORRECTIVE ACTION
Redondo Beach, California)	CONSENT AGREEMENT
)	
Respondent.)	
)	Health and Safety Code
)	Section 25187
_____)	

INTRODUCTION

1. The Department of Toxic Substances Control (DTSC) and TRW Inc. (Respondent) enter into this Corrective Action Consent Agreement (Consent Agreement) and agree as follows:

1.1. Jurisdiction exists pursuant to Health and Safety Code section 25187, which authorizes DTSC to issue an order to require corrective action when DTSC determines that there is or may be a release of hazardous waste or hazardous waste constituents into the environment from a hazardous waste facility.

1.2. The parties enter into this Consent Agreement to avoid the expense of litigation and to carry out promptly the corrective action described below.

1.3. Respondent is the owner and operator of a hazardous waste facility in Manhattan Beach and Redondo Beach, Los Angeles County, California (Facility). The property owner of the Redondo Beach portion of the Facility is solely Respondent (EPA ID Number CAD 981574171). The property owners of the Manhattan Beach portion of the Facility are Parstem Realty, Continental Development Corporation, and Respondent (EPA ID Number CAD008324949). The address of the Facility is; TRW, Inc., One Space Park, Redondo Beach, California, 90278.

1.4. Respondent engaged in the management of hazardous waste pursuant to a Hazardous Waste Facility Permit (Permit) issued August 12, 1983, by the California Department of Health Services (DHS), which was DTSC's predecessor. The Permit authorized Respondent to operate as a hazardous waste storage and treatment facility in Manhattan Beach. On February 11, 1988, Respondent submitted an application for a permit renewal. On July 14, 1988, DHS informed Respondent about delaying the processing of the Permit renewal application and authorized Respondent

to operate under the expired Permit. Respondent operated under the expired Permit from 1988 through November 19, 1997, when Respondent's closure certification was approved by DTSC. The Redondo Beach facility is a 90-day generator and has wastewater treatment systems which operate under DTSC's Permit by Rule.

1.5. The terms used in this Consent Agreement are as defined in the California Code of regulations, Title 22, Section 66260.10, except as otherwise provided.

1.6. Respondent agrees to implement all DTSC-approved workplans and to undertake all actions required by the terms and conditions of this Consent Agreement, including any portions of this Consent Agreement incorporated by reference.

1.7. Respondent waives any right to request a hearing on this Consent Agreement pursuant to Health and Safety Code section 25187.

FINDINGS OF FACT

2.1. On June 28, 1999, DTSC completed a Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA). The RFA identifies Solid waste Management Units (SWMUs) that either have released or may release hazardous waste or hazardous waste constituents into the environment. The SWMUs that were identified at the Facility are as follows:

- SWMU No.1. R6 Wastewater Neutralization System
- SWMU No.2. Gallium Arsenide Wastewater Separation System
- SWMU No.3. D1 Neutralization Wastewater System and Discharge Point to Publicly Owned Treatment Works
- SWMU No.4. X-Rite 636 Silver Recovery Unit in Building M5
- SWMU No.5. Former Chevron Oil Reservoir Number 13
- SWMU No.6. Communication Manhole Number 5
- SWMU No.7. Building 66 Clarifier
- SWMU No.8. Building D1 Underground Diesel Storage Tank
- SWMU No.9. Building R6 Underground Waste Solvent Tank and Aboveground Waste Solvent Tank
- SWMU No.10. Building 03 Underground Diesel Storage Tank
- SWMU No.11. Building R6 Chemical Storage Bunkers
- SWMU No.12. Building D1 Chemical Storage Bunkers
- SWMU No.13. HMT-3
- SWMU No.14. Building 67 Chemical Storage Area
- SWMU No.15. Building R6 Old Plating Shop
- SWMU No.16. Former 750-gallon Perchloroethylene Tank Outside Building M3
- SWMU No.17. Aboveground Trichloroethylene Tank Outside Building M3
- SWMU No.18. Building M3 Wastewater Treatment System
- SWMU No.19. Equipment Pits

SWMU No.20.Building M1 Sump and Soil Vapor Extraction Systems
SWMU No.21.Groundwater Treatment System at Building E2 Parking Lot
SWMU No.22.Building R7 Underground Diesel Tank
SWMU No.23.Building S Underground Diesel tank
SWMU No.24.Building E2 Underground Diesel Tank
SWMU No.25.Building O1 Chemical Storage Bunkers
SWMU No.26.Building M3 Accumulation Area
SWMU No.27.Building R1 Acid Neutralization System
SWMU No.28.Building D1 Aboveground Waste Solvent Tanks
SWMU No.29.Building D1 Heavy Metal Treatment System
SWMU No.30.Building M3 Temporary Tanks
SWMU No.31.Building M3 Treatment System Holding tanks
SWMU No.32.Building M3 North Accumulation Bin

2.2. Based on the RFA, Visual Site Inspection and review of the files submitted by the Respondent, DTSC concludes that further investigation is still needed to determine the nature and extent of any release of hazardous waste or hazardous waste constituents in SWMUs Numbers 7, 16, 19 and 24. DTSC made this determination after reviewing all the documents submitted by the Respondent relating to all the SWMUs. DTSC reviewed the documents pursuant to the Corrective Action Consent Agreement of March 9, 2001 (Docket HWCA:P1-98/99-003). DTSC recommended a "No Further Action" for all the SWMUs except SWMUs 5, 6, 7, 16, 19, and 24 status. This Corrective Action Consent Agreement will only address SWMUs No. 7, 16, 19, and 24.

2.3. SWMUs No. 5 and 6 will be addressed in a separate corrective action consent agreement.

2.4. Hazardous wastes or hazardous waste constituents may have migrated from the Facility into the environment through the soil, groundwater, air and subsurface gas pathways.

2.5. The Facility is located in the cities of Manhattan Beach and Redondo Beach, Los Angeles county, near residential homes, shopping malls, television studios, refineries, and heavy industrial manufacturers.

PROJECT COORDINATOR

3. Within fourteen (14) days of the effective date of this Consent Agreement, DTSC and Respondent shall each designate a Project Coordinator and shall notify each other in writing of the Project Coordinator selected. Each Project Coordinator shall be responsible for overseeing the implementation of this Consent Agreement and for designating a person to act in his/her absence. All communications between Respondent and DTSC, and all documents, report approvals, and other correspondence concerning the activities performed pursuant to this Consent Agreement shall be directed through the Project Coordinators.

Each party may change its Project Coordinator with at least seven- (7) day's prior written notice.

WORK TO BE PERFORMED

4. Respondent agrees to perform the work required by this Consent Agreement for the SWMUs No. 7, 16, 19 and 24 in accordance with the applicable state and federal laws, their implementing regulations, and DTSC-approved workplans, and in a manner consistent with the attached Scopes of Work and the applicable DTSC and the United States Environmental Protection Agency (USEPA) guidance documents.

RCRA FACILITY INVESTIGATION (RFI)

5.1. Within 60 days of the effective date of this Consent Agreement, Respondent shall submit to DTSC a Current Conditions Report and Workplan for a RCRA Facility Investigation ("RFI Workplan"). The Current Conditions Report and RFI Workplan are subject to approval by DTSC and shall be developed in a manner consistent with the Scope of Work for a RCRA Facility Investigation contained in Attachment 1 (please note that the scope of work in this Attachment relates only to SWMUs identified Paragraph 4.0). DTSC will review the Current Conditions Report and RFI Workplan and notify Respondent in writing of DTSC's approval or disapproval.

5.2. The RFI Workplan shall detail the methodology to: (1) gather data needed to make decisions on interim measures/ stabilization during the early phases of the RCRA Facility Investigation; (2) identify and characterize all sources of contamination; (3) define the nature, degree and extent of contamination; (4) define the rate of movement and direction of contamination flow; (5) characterize the potential pathways of contaminant migration; (6) identify actual or potential human and/or ecological receptors; and (7) support development of alternatives from which a corrective measure will be approved by DTSC. A specific schedule for implementation of all activities shall be included in the RFI Workplan.

5.3. Respondent shall submit a RFI Report to DTSC for approval in accordance with DTSC-approved RFI Workplan schedule. The RFI Report shall be developed in a manner consistent with the Scope of Work for a RCRA Facility Investigation contained in Attachment 1. If there is a phased investigation, separate RFI Reports and a report that summarizes the findings from all phases of the RFI must be submitted to DTSC. DTSC will review the RFI Report(s) and notify Respondent in writing of DTSC's approval or disapproval.

5.4. Concurrent with the submission of a RFI Workplan, Respondent shall submit to DTSC a Health and Safety Plan in accordance with Attachment 2 (please note that the scope of work in this Attachment only relates to SWMUs identified in Paragraph 4.0).

5.5. Respondent shall submit a RFI Summary Fact Sheet to DTSC that summarizes the findings from all phases of the RFI. The RFI Summary Fact Sheet shall be submitted to DTSC in accordance with the schedule contained in the approved RFI Workplan. DTSC will review the RFI Summary Fact Sheet and notify Respondent in writing of DTSC's approval or disapproval, including any comments and/or modifications. When DTSC approves the RFI Summary Fact Sheet, Respondent shall mail the approved RFI Summary Fact Sheet to all individuals on the Facility mailing list established pursuant to California Code Regulations, title 22, section 66271.9(c)(1)(D), within 30 calendar days of receipt of written approval.

5.6. Concurrent with the submission of a RFI Workplan, Respondent shall submit to DTSC for approval a Community Profile in accordance with Attachment 3 (please note that the scope of work in this Attachment only relates to SWMUs identified in Paragraph 4.0). Based on the information provided in the Community Profile and any Supplement to the Community Profile, if DTSC determines that there is a high level of community concern about the Facility, Respondent shall prepare a Public Participation Plan.

5.7. DTSC and Respondent will use best efforts to negotiate another consent agreement to address other phases of corrective action including but not limited to corrective action measure study, remedy selections, and corrective measure implementation, if necessary. If another consent agreement is not entered into for the other phases of corrective action as stated above, within 60 days from the date it is decided by DTSC that other phases of corrective action are deemed necessary, DTSC reserves its right to issue an order or take other action provided for by law.

RISK ASSESSMENT

6. Based on the information available to DTSC, Respondent may be required to conduct a Risk Assessment to evaluate potential human health risk and ecological risk and to establish site-specific action levels and cleanup standards. If DTSC determines that a Risk Assessment is required, Respondent shall submit to DTSC for approval a Risk Assessment Workplan within 60 days of receipt of DTSC's determination. Respondent shall submit to DTSC for approval a Risk Assessment Report in accordance with DTSC-approved Risk Assessment Workplan schedule.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

7. DTSC must comply with the California Environmental Quality Act (CEQA) insofar as activities required by this Consent Agreement are projects subject to CEQA. Respondent shall provide all information necessary to facilitate any CEQA analysis. DTSC will make an initial determination regarding the applicability of CEQA. If the activities are not exempt from CEQA, DTSC will conduct an Initial Study. Based on the results of the Initial Study, DTSC will determine if a Negative Declaration or an Environmental Impact Report (EIR) should be prepared. DTSC will prepare and process any such Negative Declaration.

However, should DTSC determine that an EIR is necessary, such an EIR would be prepared under a separate agreement between DTSC and Respondent.

DTSC APPROVAL

8.1. Respondent shall revise any workplan, report, specification, or schedule in accordance with DTSC's written comments. Respondent shall submit to DTSC any revised documents by the due date specified by DTSC. Revised submittals are subject to DTSC's approval or disapproval. The DTSC's approval or disapproval is subject to Section 16.0 of this Consent Agreement.

8.2. Upon receipt of DTSC's written approval, Respondent shall commence work and implement any approved workplan in accordance with the schedule and provisions contained therein.

8.3. Any DTSC-approved workplan, report, specification, or schedule required under this Consent Agreement shall be deemed incorporated into this Consent Agreement.

8.4. Verbal advice, suggestions, or comments given by DTSC representatives will not constitute an official approval or decision.

SUBMITTALS

9.1. Beginning with the first full quarter following the effective date of this Consent Agreement, Respondent shall provide DTSC with quarterly progress reports of corrective action activities conducted pursuant to this Consent Agreement. Progress reports are due on the first day of the second month following the close of each reporting period.

9.2. Any report or other document submitted by Respondent pursuant to this Consent Agreement shall be signed and certified by the project coordinator, a responsible corporate officer, or a duly authorized representative.

9.3. The certification required by paragraph 9.2 above, shall be in the following form:

I certify that the information contained in or accompanying this submittal is true, accurate, and complete. As to those portions of this submittal for which I cannot personally verify the accuracy, I certify that this submittal and all attachments were prepared at my direction in accordance with procedures designed to assure that qualified personnel properly gathered and evaluated the information submitted.

Signature: _____

Name: _____

Title: _____

Date: _____

9.4. Respondent shall provide three copies of all documents, including but not limited to, workplans, reports, and correspondence. Submittals specifically exempted from this copy requirement are all progress reports and correspondence of less than 15 pages, of which one copy is required.

9.5. Unless otherwise specified, all reports, correspondence, approvals, disapprovals, notices, or other submissions relating to this Consent Agreement shall be in writing and shall be sent to the current Project Coordinators.

PROPOSED CONTRACTOR/CONSULTANT

10. All work performed pursuant to this Consent Agreement shall be under the direction and supervision of a professional engineer or registered geologist, registered in California, with expertise in hazardous waste site cleanup. Respondent's contractor or consultant shall have the technical expertise sufficient to fulfill his or her responsibilities. Within fourteen (14) days of the effective date of this Consent Agreement, Respondent shall notify DTSC Project Coordinator in writing of the name, title, and qualifications of the professional engineer or registered geologist and of any contractors or consultants and their personnel to be used in carrying out the terms of this Consent Agreement.

ADDITIONAL WORK

11. DTSC may determine or Respondent may propose that certain tasks, including investigatory work, engineering evaluation, or procedure/methodology modifications are necessary in addition to, or in lieu of, the tasks and deliverables included in any part of DTSC-approved workplans. DTSC shall request in writing that Respondent perform the additional work and shall specify the basis and reasons for DTSC's determination that the additional work is necessary. Within fourteen (14) days after the receipt of such determination, Respondent may confer with DTSC to discuss the additional work DTSC has requested. If required by DTSC, Respondent shall submit to DTSC a workplan for the additional work. Such workplan shall be submitted to DTSC within thirty (30) days of receipt of DTSC's determination or according to an alternate schedule established by DTSC. Upon approval of a workplan, Respondent shall implement it in accordance with the provisions and schedule contained therein. The need for, and disputes concerning, additional work are subject to the dispute resolution procedures specified in this Consent Agreement.

QUALITY ASSURANCE

12.1. All sampling and analyses performed by Respondent under this Consent Agreement shall follow applicable DTSC and USEPA guidance for sampling and analysis. Workplans shall contain quality assurance/quality control and chain of custody procedures for all sampling, monitoring, and analytical activities. Any deviations from the approved workplans must be approved by DTSC

prior to implementation, must be documented, including reasons for the deviations, and must be reported in the applicable report.

12.2. The names, addresses, and telephone numbers of the California State certified analytical laboratories Respondent proposes to use must be specified in the applicable workplans.

SAMPLING AND DATA/DOCUMENT AVAILABILITY

13.1. Respondent shall submit to DTSC upon request the results of all sampling and/or tests or other data generated by its employees, agents, consultants, or contractors pursuant to this Consent Agreement.

13.2. Respondent shall notify DTSC in writing at least seven (7) days prior to beginning each separate phase of field work approved under any workplan required by this Consent Agreement. If Respondent believes it must commence emergency field activities without delay, Respondent may seek emergency telephone authorization from DTSC Project Coordinator or, if the Project Coordinator is unavailable, his/her Branch Chief, to commence such activities immediately.

13.3. At the request of DTSC, Respondent shall provide or allow DTSC or its authorized representative to take split or duplicate samples of all samples collected by Respondent pursuant to this Consent Agreement. Similarly, at the request of Respondent, DTSC shall allow Respondent or its authorized representative to take split or duplicate samples of all samples collected by DTSC under this Consent Agreement.

ACCESS

14. Subject to the Facility's security and safety procedures, Respondent agrees to provide DTSC and its representatives access at all reasonable times to the Facility and exercises best efforts to provide access to any off-site property to which access is required for implementation of this Consent Agreement and shall permit such persons to inspect and copy all records, files, photographs, documents, including all sampling and monitoring data, that pertain to work undertaken pursuant to this Consent Agreement and that are within the possession or under the control of Respondent or its contractors or consultants.

RECORD PRESERVATION

15.1. Respondent shall retain, during the pendency of this Consent Agreement and for a minimum of six (6) years after its termination, all data, records, and documents that relate in any way to the performance of this Consent Agreement or to hazardous waste management and/or disposal at the Facility. Respondent shall notify DTSC in writing ninety (90) days prior to the destruction of any such records, and shall provide DTSC with the opportunity to take possession of any such records. Such written notification shall reference the effective date, caption, and docket number of this Consent Agreement and shall be addressed to:

James M. Pappas, P.E., Chief
Land Disposal Branch
Department of Toxic Substances Control
8800 Cal Center Drive
Sacramento, California 95826

15.2. If Respondent retains or employs any agent, consultant, or contractor for the purpose of carrying out the terms of this Consent Agreement, Respondent will require any such agents, consultants, or contractors to provide Respondent a copy of all documents produced pursuant to this Consent Agreement.

15.3. All documents pertaining to this Consent Agreement shall be stored in a central location at the Facility, or at a location otherwise agreed to by the parties, to afford easy access by DTSC and its representatives.

DISPUTE RESOLUTION

16.1. The parties agree to use their best efforts to resolve all disputes informally. The parties agree that the procedures contained in this section are the sole administrative procedures for resolving disputes arising under this Consent Agreement. If Respondent fails to follow the procedures contained in this section, it shall have waived its right to further consideration of the disputed issue.

16.2. If Respondent disagrees with any written decision by DTSC pursuant to this Consent Agreement, Respondent's Project Coordinator shall orally notify DTSC's Project Coordinator of the dispute. The Project Coordinators shall attempt to resolve the dispute informally.

16.3. If the Project Coordinators cannot resolve the dispute informally, Respondent may pursue the matter formally by placing its objection in writing. Respondent's written objection must be forwarded to James M. Pappas, Chief, Land Disposal Branch, Hazardous Waste Management Program, Department of Toxic Substances Control, with a copy to DTSC's Project Coordinator. The written objection must be mailed to the Branch Chief within thirty (30) days of Respondent's receipt of DTSC's written decision. Respondent's written objection must set forth the specific points of the dispute and the basis for Respondent's position.

16.4. DTSC and Respondent shall have thirty (30) days from DTSC's receipt of Respondent's written objection to resolve the dispute through formal discussions. This period may be extended by DTSC for good cause. During such period, Respondent may meet or confer with DTSC to discuss the dispute.

16.5. After the formal discussion period, DTSC will provide Respondent with its written decision on the dispute. DTSC's written decision will reflect any agreements reached during the formal discussion period and be signed by the Branch Chief or his/her designee.

16.6. During the pendency of all dispute resolution procedures set forth above, the time periods for completion of work required under this Consent Agreement that are affected by such dispute shall be extended for a period of time to include but not to exceed the actual time taken to resolve the dispute. The existence of a dispute shall not excuse, toll, or suspend any other compliance obligation or deadline required pursuant to this Consent Agreement.

RESERVATION OF RIGHTS

17.1. DTSC reserves all of its statutory and regulatory powers, authorities, rights, and remedies, which may pertain to Respondent's failure to comply with any of the requirements of this Consent Agreement. Respondent reserves all of its statutory and regulatory rights, defenses and remedies, as they may arise under this Consent Agreement. This Consent Agreement shall not be construed as a covenant not to sue, release, waiver, or limitation on any powers, authorities, rights, or remedies, civil or criminal, that DTSC or Respondent may have under any laws, regulations or common law.

17.2. DTSC reserves the right to disapprove of work performed by Respondent pursuant to this Consent Agreement and to request that Respondent perform additional tasks.

17.3. DTSC reserves the right to perform any portion of the work consented to herein or any additional site characterization, feasibility study, and/or remedial actions it deems necessary to protect human health and/or the environment. DTSC may exercise its authority under any applicable state or federal law or regulation to undertake response actions at any time. DTSC reserves its right to seek reimbursement from Respondent for costs incurred by the State of California with respect to such actions. DTSC will notify Respondent in writing as soon as practicable regarding the decision to perform any work described in this section.

17.4. If DTSC determines that activities in compliance or noncompliance with this Consent Agreement have caused or may cause a release of hazardous waste and/or hazardous waste constituents, or a threat to human health and/or the environment, or that Respondent is not capable of undertaking any of the work required, DTSC may order Respondent to stop further implementation of this Consent Agreement for such period of time as DTSC determines may be needed to abate any such release or threat and/or to undertake any action which DTSC determines is necessary to abate such release or threat. The deadlines for any actions required of Respondent under this Consent Agreement affected by the order to stop work shall be extended to take into account DTSC's actions.

17.5. This Consent Agreement is not intended to be nor shall it be construed to be a permit. The parties acknowledge and agree that DTSC's approval of any workplan, plan, and/or specification does not constitute a warranty

or representation that the workplans, plans, and/or specifications will achieve the required cleanup or performance standards. Compliance by Respondent with the terms of this Consent Agreement shall not relieve Respondent of its obligations to comply with the Health and Safety Code or any other applicable local, state, or federal law or regulation.

OTHER CLAIMS

18. Except as provided in this Consent Agreement, nothing in this Consent Agreement shall constitute or be construed as a release by DTSC or Respondent from any claim, cause of action, or demand in law or equity against any person, firm, partnership, or corporation for any liability it may have arising out of or relating in any way to the generation, storage, treatment, handling, transportation, release, or disposal of any hazardous constituents, hazardous substances, hazardous wastes, pollutants, or contaminants found at, taken to, or taken or migrating from the Facility.

COMPLIANCE WITH WASTE DISCHARGE REQUIREMENTS

19. Respondent shall comply with all applicable waste discharge requirements issued by the State Water Resources Control Board or a California regional water quality control board.

OTHER APPLICABLE LAWS

20. All actions required by this Consent Agreement shall be conducted in accordance with the requirements of all local, state, and federal laws and regulations. Respondent shall obtain or cause its representatives to obtain all permits and approvals necessary under such laws and regulations.

REIMBURSEMENT OF DTSC'S COSTS

21.1. Respondent shall pay DTSC's costs incurred in the implementation of this Consent Agreement.

21.2. An estimate of DTSC's costs is attached as Exhibit A showing the amount of \$26,341. It is understood by the parties that this amount is only a cost estimate for the activities shown on Exhibit A and it may differ from the actual costs incurred by DTSC in overseeing these activities or in implementing this Consent Agreement. DTSC will provide additional cost estimates to Respondent as the work progresses under the Consent Agreement.

21.3. Respondent shall make an advance payment to DTSC in the amount of \$ 10,000 within 30 days of the effective date of this Consent Agreement. If the advance payment exceeds DTSC's costs, DTSC will refund the balance within 120 days after the execution of the Acknowledgment of Satisfaction pursuant to Section 23 of this Consent Agreement.

21.4. DTSC will provide Respondent with a billing statement at least quarterly, which will include the name(s) of the employee(s), identification of the activities, the amount of time spent on each activity, and the hourly rate charged. If Respondent does not pay an invoice within 60 days of the date of the billing statement, the amount is subject to interest as provided by Health and Safety Code section 25360.1.

21.5. DTSC will retain all costs records associated with the work performed under this Consent Agreement as required by state law. DTSC will make all documents that support the Department's cost determination available for inspection upon request, as provided by the Public Records Act.

21.6. Any dispute concerning DTSC's costs incurred pursuant to this Consent Agreement is subject to the Dispute Resolution provision of this Consent Agreement and the dispute resolution procedures as established pursuant to Health and Safety Code section 25269.2. DTSC reserves its right to recover unpaid costs under applicable state and federal laws.

21.7. All payments shall be made within 30 days of the date of the billing statement by check payable to the Department of Toxic Substances Control and shall be sent to:

Accounting Unit
Department of Toxic Substances Control
P. O. Box 806
Sacramento, California 95812-0806

All checks shall reference the name of the Facility, the Respondent's name and address, and the docket number of this Consent Agreement. Copies of all checks and letters transmitting such checks shall be sent simultaneously to DTSC's Project Coordinator.

MODIFICATION

22.1. This Consent Agreement may be modified by mutual agreement of the parties. Any agreed modification shall be in writing, shall be signed by both parties, shall have as its effective date the date on which it is signed by all the parties, and shall be deemed incorporated into this Consent Agreement.

22.2. Any requests for revision of an approved workplan requirement must be in writing. Such requests must be timely and provide justification for any proposed workplan revision. DTSC has no obligation to approve such requests, but if it does so, such approval will be in writing and signed by James M. Pappas Chief, Land Disposal Branch, Hazardous Waste Management Program, Department of Toxic Substances Control, or his or her designee. Any approved workplan revision shall be incorporated by reference into this Consent Agreement.

TERMINATION AND SATISFACTION

23. The provisions of this Consent Agreement shall be deemed satisfied upon the execution by both parties of an Acknowledgment of Satisfaction (Acknowledgment). DTSC will prepare the Acknowledgment for Respondent's signature. The Acknowledgment will specify that Respondent has demonstrated to the satisfaction of DTSC that the terms of this Consent Agreement including payment of DTSC's costs have been satisfactorily completed. The Acknowledgment will affirm Respondent's continuing obligation to preserve all records after the rest of the Consent Agreement is satisfactorily completed.

EFFECTIVE DATE

24. The effective date of this Consent Agreement shall be the date on which all the parties sign this Consent Agreement. Except as otherwise specified, "days" means calendar days.

SIGNATORIES

25. Each undersigned representative certifies that he or she is fully authorized to enter into this Consent Agreement.

DATE: July 12, 2002

BY:____/original signed by/_____

William E. Gallas
Assistant Secretary
TRW, INC.
One Space Park
Redondo Beach, California 90278

DATE: August 5, 2002

BY:____/original signed by/_____

James M. Pappas, P.E., Chief
Land Disposal Branch
Hazardous Waste Management Program
Department of Toxic Substances Control

ATTACHMENT 1

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION

PURPOSE

The purpose of this RCRA Facility Investigation (RFI) is to determine the nature and extent of releases of hazardous waste or constituents from regulated units, solid waste management units, and other source areas at the Facility and to gather all necessary data to support the Corrective Measures Study. The RFI must include characterization of the facility (processes, waste management, etc), environmental setting, source areas, nature and extent of contamination, migration pathways (transport mechanisms) and all potential receptors.

SCOPE

The documents required for a RFI are, unless the Department of Toxic Substances Control (Department) specifies otherwise, a Current Conditions Report, a RCRA Facility Investigation Workplan and a RCRA Facility Investigation Report. The scope of work (SOW) for each document is specified below. The SOWs are intended to be flexible documents capable of addressing both simple and complex site situations. If the Owner/Operator or Respondent can justify, to the satisfaction of the Department, that a plan and/or report or portions thereof are not needed in the given site specific situation, then the Department may waive that requirement.

The scope and substance of the RFI should be focused to fit the complexity of the site-specific situation. It is anticipated that Owner/Operator's or Respondent's of sites with complex environmental problems may need more extensive RFI's than other facilities with less complex problems.

The Department may require the Owner/Operator or Respondent to conduct additional studies beyond what is discussed in the SOWs in order to meet the objectives of the RFI. The Owner/Operator or Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks.

A. Current Conditions Report

The Current Conditions Report must describe existing information pertinent to the facility including operations, processes, waste management, geology, hydrogeology, contamination, migration pathways, potential receptor populations and interim corrective measures. The required format for a current conditions report is described below. If some of this information does not exist, so indicate in the applicable section.

1. Introduction

1.1 Purpose

Describe the purpose of the current conditions report (e.g., summary and evaluation of existing information related to the facility; required as a component of RFI).

1.2 Organization of Report

Describe how the report is organized.

2. Facility Description

Summarize background, current operations, waste management and products produced at the facility. Include a map that shows the general geographic location of the facility.

Describe current facility structures including any buildings, tanks, sumps, wells, waste management areas, landfills, ponds, process areas and storage areas.

Include detailed facility maps that clearly show current property lines, the owners of all adjacent property, surrounding land use (residential, commercial, agricultural, recreational, etc.), all tanks, buildings, process areas, utilities, paved areas, easements, rights-of-way, waste management areas, ponds, landfills, piles, underground tanks, wells and other facility features.

3. Facility History

3.1 Ownership History

Describe the ownership history of the facility.

3.2 Operational History

Describe in detail how facility operations, processes and products have changed over time (historical aerial photographs could be useful for this purpose).

3.3 Regulatory History

Describe all permits (including waste discharge requirements) requested or received, any enforcement actions taken by the Department or designated agencies and any closure activities that are planned or underway.

3.4 Waste Generation

Describe all wastes (solid or hazardous) that have been generated at the facility. Include approximate waste volumes generated and summaries of any waste analysis data. Show how the waste stream (volume and chemical composition) has changed over time.

3.5 Waste Management

Describe in detail all past solid and hazardous waste treatment, storage and disposal activities at the facility. Show how these activities have changed over time and indicate the current status. Make a clear distinction between active waste management units and older out of service waste management units. Identify which waste management units are regulated under RCRA or California Health and Safety Code.

Include maps showing: (1) all solid or hazardous waste treatment, storage or disposal areas active after November 19, 1980, (2) all known past solid waste or hazardous waste treatment, storage or disposal areas regardless of whether they were active on November 19, 1980 and (3) all known past or present underground tanks or piping.

3.6 Spill and Discharge History

Provide approximate dates or periods of past product and waste spills, identify the materials spilled and describe any response actions conducted. Include a summary of any sampling data generated as a result of the spill. Include a map showing approximate locations of spill areas at the facility.

3.7 Chronology of Critical Events

Provide a chronological list (including a brief description) of major events, communications, agreements, notices of violation, spills, discharges that occurred throughout the facility's history.

4. Environmental Setting

4.1 Location/Land Use

Discuss facility size, location and adjacent land use. Include a rough demographic profile of the human population who use or have access to the facility and adjacent lands. Provide approximate distance to nearest residential areas, schools, nursing homes, hospitals, parks, playgrounds, etc.

4.2 Local Ecology

Describe any endangered or threatened species near the facility. Include a description of the ecological setting on and adjacent to the facility. Provide approximate distance to nearest environmentally sensitive areas such as marsh lands, wetlands, streams, oceans, forests, etc.

4.3 Topography and Surface Drainage

Describe the regional and site specific topography and surface drainage patterns that exist at the facility. Include a map that shows the topography and surface drainage depicting all waterways, wetlands, floodplains, water features, drainage patterns and surface water containment areas.

4.4 Climate

Discuss mean annual temperatures, temperature extremes, 25-year 24-hour maximum rainfall, average

annual rainfall, prevailing wind direction, etc.

4.5 Surface Water Hydrology

Describe the facility's proximity (distance) and access to surface water bodies (e.g., coastal waters, lakes, rivers, creeks, drainage basins, floodplains, vernal pools, wetlands, etc.). Describe flows on-site that lead to holding basins, etc., and describe flows that leave the site.

4.6 Geology

Describe the regional and site specific geology including stratigraphy and structure. Include a geologic map and cross-sections to show the subsurface structure. Cross-sections should be at a natural scale (vertical equals horizontal) and of sufficient detail to accurately plot cut and fills, alluvium, and structural features. Cross-sections should be taken on a grid pattern oriented normal to major geologic structure and spaced close enough to determine geology and ground water flow on a unit-by-unit basis.

4.7 Hydrogeology

Describe the regional and site specific hydrogeologic setting including any information concerning local aquifers, ground water levels, gradients, flow direction, hydraulic conductivity, and velocity. Include potentiometric surface contour maps. Describe the beneficial uses of the ground water (e.g., drinking water supply, agricultural water supply, etc.). Plot ground water elevations on the geologic cross-sections and indicate ground water flow directions and likely contaminant pathways. Describe temporal variations (seasonal and historical).

4.8 Ground Water Monitoring System

Describe the facility's ground water monitoring system including a table detailing the existing well construction. The table must, at a minimum, identify the following construction details for each well:

Well ID
Completion Date
Drilling Method
Borehole Diameter (inches)
Well Casing Diameter and Type
Measuring Point Elevation (feet MSL)
Borehole Depth (feet BGS)
Depth of Well (feet)
Screened Interval
Formation Screened
Slot Size & Type (inches)
Filter Pack Material
Filter Pack Thickness and Spacing
Type of Filter Pack Seal
Thickness of Filter Pack Seal
Pump System (dedicated or non-dedicated)
Type of Pump and Depth in the Well
Approximate Depth to Water (feet BGS)

If some of this information is not available, so indicate on the table with an "NA". {BGS: Below Ground Surface, MSL: Mean Sea Level}

The monitoring well locations must be shown on the facility map (see Section A.2 of this Attachment).

5. Existing Degree and Extent of Contamination

For each medium where the Permit or Order identifies a release (e.g., soil, ground water, surface water, air, etc.), describe the existing extent of contamination. This description must include all available monitoring data and qualitative information on the locations and levels of contamination at the facility (both onsite and offsite). Include a general assessment of the data quality, a map showing the location of all existing sampling points and potential source areas and contour maps showing any existing ground water plumes at the facility (if ground water release). Highlight potential ongoing release areas that would warrant use of interim corrective measures (see Section 8, Interim Corrective Measures).

5.1 Previous Investigations

List and briefly describe all previous investigations that have occurred at the

facility, agencies (e.g., the Department's Site Mitigation Branch, the Regional Water Quality Control Board, etc.) which required and/or oversaw the investigations, and agency contacts.

6. Potential Migration Pathways

6.1 Physical Properties of Contaminants

Identify the applicable physical properties for each contaminant that may influence how the contaminant moves in the environment. These properties could include melting point (degrees C), water solubility (mg/l), vapor pressure (mm Hg), Henry's law constant (atm-m³/mol), density (g/cc), dynamic viscosity (cp), kinematic viscosity (cs), octanol/water partition coefficient (log Kow), soil organic carbon/water partition coefficient (log koc) and soil/water partition coefficients, etc. Include a table that summarizes the applicable physical properties for each contaminant.

6.2 Conceptual Model of Contaminant Migration

Develop a conceptual model of contaminant migration. The conceptual model consists of a working hypothesis of how the contaminants may move from the release source to the receptor population. The conceptual model is developed by looking at the applicable physical parameters for each contaminant and assessing how the contaminant may migrate given the existing site conditions (geologic features, depth to ground water, etc.).

Describe the phase (water, soil, gas, non-aqueous) and location where contaminants are likely to be found (e.g., if a ground water contaminant has a low water solubility and a high density, then the contaminant will likely sink and be found at the bottom of the aquifer, phase: non-aqueous). Include a discussion of potential transformation reactions that could impact the type and number of contaminants (i.e., what additional contaminants could be expected as a result of biotic and abiotic transformation reactions given the existing soil conditions).

A typical conceptual model should include a discussion similar to the following: benzene, ethylbenzene, toluene and xylenes are potential contaminants at the facility. Based on their high vapor pressures and relatively low water solubilities (see Henry's Law constant), the primary fate of these compounds in surface soils or surface water is expected to be volatilization to the atmosphere. These mono-cyclic aromatic hydrocarbons may leach from soils into ground water. The log K_{oc} (soil organic carbon/water partition coefficient) values for these compounds ranges from 1.9 to 4.0, indicating that sorption to organic matter in soils or sediments may occur only to a limited extent.

7. Potential Impacts of Existing Contamination

Describe the potential impacts on human health and the environment from any existing contamination and/or ongoing activities at the facility. This description must consider the possible impacts on sensitive ecosystems and endangered species as well as on local populations. Potential impacts from any releases to ground water, surface water, soil (including direct contact with contaminated surface soil) and air (including evaporation of volatile organic compounds from contaminated soil) must be discussed. If air could be a significant pathway, soil gas or vapor emissions and/or ambient air monitoring should be described.

7.1 Ground Water Releases

Identify all wells (municipal, domestic, agricultural, industrial, etc.) within a 1-mile radius of the facility. Include a summary of available water sampling data for any identified municipal, industrial or domestic supply wells.

Develop a well inventory table that lists the following items for each identified well:

Well Designation
State ID
Reported Owner
Driller
Date of Completion

Original Use of Well
Current Use of Well
Drilling Method
Borehole Diameter (inches)
Casing Diameter (inches)
Perforated Interval (feet)
Gravel Pack Interval (feet)
Total Well Depth (feet)
Depth to Water (feet below ground surface)
Date of Water Level Measurement

If some of this information is not available, so indicate on the table with an "NA".

Include a regional map showing the facility, ground water flow direction (if known) and the location of all identified wells within a 1-mile radius of the facility.

Identify and describe any potential ground water discharge to surface water bodies.

Identify and list all relevant and applicable water standards for the protection of human health and the environment (e.g., maximum contaminant levels, water quality standards, etc).

7.2 Surface Water Releases

Discuss the facility's potential impact on surface water within a 2-mile radius of the facility. Describe the potential beneficial uses of the surface water (e.g., drinking water supply, recreational, agricultural, industrial, or environmentally sensitive). Identify all water supply intake points and contact areas within a 2-mile radius of the facility. Include a summary of the most recent water sampling data available for each of the identified water supply intake points. Include a description of the biota in surface water bodies on, adjacent to, or which can be potentially affected by the release. Also summarize any available sediment sampling data.

Include a regional map showing the facility, surface water flow direction, beneficial use areas, and the location of any identified water supply intake

points or contact areas that are within a 2-mile radius of the facility.

7.3 Sensitive Ecosystems/Habitats

Discuss the facility's potential impact on sensitive ecosystems.

8. Interim Corrective Measures and Stabilization Assessment

Identify all corrective measures that were or are being undertaken at the facility to stabilize contaminant releases. Describe the objectives of the corrective measures including how the measure is mitigating a potential threat to human health and the environment. Summarize the design features of the corrective measure. Include a schedule for completing any ongoing or future work.

Identify and describe potential interim corrective measure alternatives that could be implemented immediately to stabilize any ongoing releases and/or prevent further migration of contaminants and control source areas.

9. Data Needs

Assess the amount and quality of existing data concerning the facility and determine what additional information must be collected to meet the objectives of the RFI. This assessment must identify any additional information that may be needed to (1) support development of interim measures for early action and (2) adequately evaluate and compare corrective measures alternatives (e.g., field work, treatability studies, computer modeling, literature searches, vendor contacts, etc.). For example, if soil vapor extraction (SVE) is a likely option to address contamination at the facility, then the RFI should collect applicable field data to assess SVE (e.g., soil gas analysis, depth to ground water, etc.). The RFI Workplan must detail how this additional information will be collected.

10. References

Provide a list of references cited in the Current Conditions Report.

B. RCRA Facility Investigation Workplan

The RFI Workplan shall define the procedures necessary to:

- o Gather all necessary data to determine where interim measures are needed and to support the use of interim measures to address immediate threats to human health and/or the environment, to prevent or minimize the spread of contaminants, to control sources of contamination and to accelerate the corrective action process (required for all releases);
- o Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any ground water contamination in and around the facility (only required for releases to ground water);
- o Characterize the geology and hydrogeology in and around the facility (only required for releases to ground water and possibly for releases to soil);
- o Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil contamination in and around the facility (only required for releases to soil);
- o Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil gas contamination in and around the facility (may be required for releases to ground water and/or soil depending on the circumstances);
- o Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any surface water contamination (includes surface water sediments) at the facility (only required for releases to surface water);
- o Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any air releases at the facility (only required for air releases);

- o Characterize any potential sources of contamination (required for all releases);
- o Characterize the potential pathways of contaminant migration (required for all releases);
- o Identify any actual or potential receptors (required for all releases);
- o Gather all data to support a risk and/or ecological assessment (if required);
- o Gather all necessary data to support the Corrective Measures Study (required for all releases). This could include conducting treatability, pilot, laboratory and/or bench scale studies to assess the effectiveness of a treatment method.

The RFI Workplan shall describe all aspects of the investigation, including project management, sampling and analysis, well drilling and installation and quality assurance and quality control. If the scope of the investigation is such that more than one phase is necessary, the "Phase 1" RFI Workplan must include a summary description of each phase. For example, the first phase of a RFI could be used to gather information necessary to focus the second phase into key areas of the facility that need further investigation.

The required format for a RFI Workplan is described below:

1. Introduction

Briefly introduce the RFI Workplan. Discuss the Order or Permit requiring the RFI and how the RFI Workplan is organized.

2. Investigation Objectives

2.1 Project Objectives

Describe the overall objectives and critical elements of the RFI. State the general information needed from the site (e.g., soil chemistry, hydraulic conductivity of aquifer, stratigraphy, ground water flow direction, identification of

potential receptors, etc.). The general information should be consistent with the objectives of the RFI and the data needs identified in the Current Conditions Report.

2.2 Data Quality Objectives

Provide data quality objectives that identify what data are needed and the intended use of the data.

3. Project Management

Describe how the investigation will be managed, including the following information:

- o Organization chart showing key personnel, levels of authority and lines of communication;
- o Project Schedule; and
- o Estimated Project Budget.

Identify the individuals or positions who are responsible for: project management, field activities, laboratory analysis, database management, overall quality assurance, data validation, etc. Include a description of qualifications for personnel performing or directing the RFI, including contractor personnel.

4. Facility Background

Summarize existing contamination (e.g., contaminants, concentrations, etc.), local hydrogeologic setting and any other areas of concern at the facility. Include a map showing the general geographic location of the facility and a more detailed facility map showing the areas of contamination. Provide a reference to the Current Conditions Report and/or other applicable documents as a source of additional information.

5. Field Investigation

5.1 Task Description

Provide a qualitative description of each investigation task. Example tasks may include, but

are not limited to the following:

- Task 1: Surface Soil Sampling
- Task 2: Surface Geophysics, Subsurface Soil Boring, and Borehole Geophysics
- Task 3: Data Gathering to Support Interim Corrective Measures
- Task 4: Monitoring Well Installation
- Task 5: Aquifer Testing
- Task 6: Ground Water Sampling
- Task 7: Potential Receptor Identification
- Task 8: Treatability Studies

5.2 Rationale for Sampling

Describe where all samples will be collected (location and depth), types of media that will be sampled and the analytical parameters. Explain the rationale for each sampling point, the total number of sampling points, and any statistical approach used to select these points. The conceptual model of contaminant migration developed in the Current Conditions Report should be considered when selecting sampling locations and depths. If some possible sampling points are excluded, explain why. Describe any field screening techniques that will be used to identify samples for laboratory analysis. Include the rationale for use of field screening techniques and criteria for sample selection.

5.2.1 Background Samples

Background samples should be analyzed for the complete set of parameters for each medium; treat sediments, surface soils and subsurface soils as separate media. Background samples are collected, numbered, packaged, and sealed in the same manner as other samples. For long term and/or especially large projects, it is recommended that 10% of samples collected be from background locations.

5.3 Sample Analysis

List and discuss all analyses proposed for the project. Include a table that summarizes the

following information for each analysis to be performed:

- o Analytical Parameters
- o Analytical Method Reference Number (from USEPA SW 846)
- o Sample Preparation and/or Extraction Method Reference Number (from USEPA SW 846)
- o Detection and Practical Quantitation Limits (Data above the detection limit but below the practical quantitation limit must be reported with the estimated concentration.)

Discuss the rationale for selection of the analytical parameters. The rationale must relate to site history and the RFI objectives. The achievable detection limits or quantitation limits stated in the selected methods must be adequate for valid comparisons of analytical results against any action levels or standards. For example, the objective may be to collect ground water data for comparison with Maximum Contaminant Levels (MCL's). If this were the case, it would be important to ensure that any ground water test methods had detection limits below the MCL's. Give an explanation if all samples from the same medium will not be analyzed for the same parameters.

Provide the name(s) of the laboratory(s) that will be doing the analytical work. Indicate any special certifications or ratings of the laboratory. Describe the steps that will be taken to select and pre-qualify analytical laboratories to be used including any previous audits and/or other criteria. If a definite laboratory has not yet been selected, list at least 3 laboratories that are being considered for the analytical work.

5.4 Sample Collection Procedures

Describe how sampling points will be selected in the field, and how these locations will be documented and marked for future reference. If a sampling grid will be used, describe the dimensions and lay out planned for the grid.

Outline sequentially or step-by-step the procedure for collecting a sample for each medium and each different sampling technique. Include a description of sampling equipment (including materials of construction), field measurements, sample preservation, housekeeping/ cleanliness techniques and well purging procedures. The procedure described must ensure that a representative sample is collected, and that sample handling does not result in cross contamination or unnecessary loss of contaminants. Special care in sample handling for volatile organic samples must be addressed. Method 5035 should be used for soil samples that will be analyzed for VOCs by an off-site laboratory.

Describe how and when duplicates, blanks, laboratory quality control samples and background samples will be collected. If samples will be filtered, describe filtration equipment and procedures.

The Owner/Operator or Respondent must include sufficient maps and tables to fully describe the sampling effort. This shall include, at a minimum, a map showing all proposed sampling locations and tables that contain the following information:

Sample Collection Table:

Sampling Location/Interval
Analytical Parameters (e.g., volatile organic compounds)
Analytical Method Number
Medium
Preservation Method
Holding Times (as specified in USEPA SW 846)
Containers (quantity, size, type plus footnotes that discuss source and grade of containers)

Sample Summary Table:

Sample Description/Area (include QC samples)
Analytical Parameters
Analytical Method Number
Preparation or Extraction Method Number
Medium
Number of Sample Sites

Number of Analyses

5.4.1 Equipment Decontamination

Describe the decontamination procedure for all drilling, sampling equipment (including metal sleeves), and field-parameter testing equipment.

The following is a recommended generic procedure for decontamination of sampling equipment:

- o Wash with non-phosphate detergent
- o Tap water rinse
- o 0.1M nitric acid rinse (when cross contamination from metals is a concern)
- o Deionized/distilled water rinse
- o Pesticide grade solvent rinse (when semivolatiles and non-volatile organic contamination may be present)
- o Deionized/distilled water rinse (twice)
- o Organic free water rinse (HPLC grade)

The above procedure is not appropriate for every field condition. Clearly document the decontamination procedures.

5.4.2 Equipment Calibration and Maintenance

Logbooks or pre-formatted calibration worksheets should be maintained for major field instruments, to document servicing, maintenance and instrument modification. The calibration, maintenance and operating procedures for all instruments, equipment and sampling tools must be based upon manufacturer's instructions. List all field equipment to be used, specify the maintenance/calibration frequency for each instrument and the calibration procedures (referenced in text and included in appendices).

5.4.3 Sample Packaging and Shipment

Describe how samples will be packaged and shipped. All applicable U.S. Department of Transportation regulations must be followed.

5.4.4 Sample Documentation

Discuss the use of all paperwork including field notebooks, record logs, photographs, sample paperwork, and Chain of Custody forms (include a blank copy in RFI Workplan Appendices) and seals.

Describe how sample containers will be labeled and provide an example label if available. At a minimum, each sample container label should include: project ID, sample location, analytical parameters, date sampled and any preservative added to the sample.

A bound field log book must be maintained by the sampling team to provide a daily record of events. Field log books shall provide the means of recording all data regarding sample collection. All documentation in field books must be made in permanent ink. If an error is made, corrections must be made by crossing a line through the error and entering the correct information. Changes must be initialed, no entries shall be obliterated or rendered unreadable. Entries in the log book must include, at a minimum, the following for each day's sampling:

- Date
- Starting Time
- Meteorological Conditions
- Field Personnel Present
- Level of Personal Protection
- Site Identification
- Field Observations/Parameters
- Sample Identification Numbers
- Location and Description of Sampling Points
- Number of Samples Collected
- Time of Sample Collection
- Signature of Person Making the Entry
- Observation of Sample Characteristics
- Photo Log
- Deviations

5.4.5 Disposal of Contaminated Materials

Describe the storage and disposal methods for all contaminated cuttings, well development

and purge water, disposable equipment, decontamination water, and any other contaminated materials. The waste material must be disposed of in a manner consistent with local, state and federal regulations.

5.4.6 Standard Operating Procedures

If Standard Operating Procedures (SOPs) are referenced, the relevant procedure must be summarized in the RFI Workplan. The SOP must be specific to the type of tasks proposed and be clearly referenced in the RFI Workplan. The SOP must also be directly applicable, as written, to the RFI Workplan; otherwise, modifications to the SOP must be discussed. Include the full SOP description in the RFI Workplan appendix.

5.5 Well Construction and Aquifer Testing

When new monitoring wells (or piezometers) are proposed, describe the drilling method, well design and construction details (e.g., depth of well, screen length, slot size, filter pack material, etc.) and well development procedures. Describe the rationale for proposed well locations and selection of all well design and construction criteria (i.e., provide rationale for selection of slot size and screen length).

When aquifer testing is proposed, describe the testing procedures, flow rates, which wells are involved, test periods, how water levels will be measured, and any other pertinent information.

6. Quality Assurance and Quality Control

Quality control checks of field and laboratory sampling and analysis serve two purposes: to document the data quality, and to identify areas of weakness within the measurement process which need correction.

Include a summary table of data quality assurance objectives that, at a minimum, lists:

- o Analysis Group (e.g., volatile organic compounds)
- o Medium
- o Practical Quantitation Limits (PQL)
- o Spike Recovery Control Limits (%R)
- o Duplicate Control Limits +/- (RPD)
- o QA Sample Frequency
- o Data Validation

A reference may note the specific pages from USEPA's SW 846 Guidance Document that list the test method objectives for precision and accuracy. If the field and laboratory numerical data quality objectives for precision are the same and presented on a single table, then a statement should be made to this effect and added as a footnote to the table (e.g., "These limits apply to both field and laboratory duplicates"). Include a copy of the analytical laboratory quality assurance/quality control plan in the appendices of the RFI Workplan and provide the equations for calculating precision and accuracy.

6.1 Field Quality Control Samples

6.1.1 Field Duplicates

Duplicates are additional samples that must be collected to check for sampling and analytical precision. Duplicate samples for all parameters and media must be collected at a frequency of at least one sample per week or 10 percent of all field samples, whichever is greater.

Duplicates should be collected from points which are known or suspected to be contaminated. For large projects, duplicates should be spread out over the entire site and collected at regular intervals.

Duplicates must be collected, numbered, packaged, and sealed in the same manner as other samples; duplicate samples are assigned separate sample numbers and submitted blind to the laboratory.

6.1.2 Blank Samples

Blanks are samples that must be collected to check for possible cross-contamination during sample collection and shipment and in the laboratory. Blank samples should be analyzed for all parameters being evaluated. At least one blank sample per day must be done for all water and air sampling. Additionally, field blanks are required for soil sampling if non-dedicated field equipment is being used for sample collection.

Blank samples must be prepared using analytically-certified, organic-free (HPLC-grade) water for organic parameters and metal-free (deionized-distilled) water for inorganic parameters. Blanks must be collected, numbered, packaged, and sealed in the same manner as other samples; blank samples are assigned separate sample numbers and submitted blind to the laboratory. The following types of blank samples may be required:

Equipment Blank: An equipment blank must be collected when sampling equipment (e.g., bladder pump) or a sample collection vessel (e.g., a bailer or beaker) is decontaminated and reused in the field. Use the appropriate "blank" water to rinse the sampling equipment after the equipment has been decontaminated and then collect this water in the proper sample containers.

Field Bottle Blank: This type of blank must be collected when sampling equipment decontamination is not necessary. The field bottle blank is obtained by pouring the appropriate "blank" water into a container at a sampling point.

6.2 Laboratory Quality Control Samples

Laboratories routinely perform medium spike and laboratory duplicate analysis on field samples as a quality control check. A minimum of one field sample per week or 1 per 20 samples (including field blanks and duplicates), whichever is greater, must be designated as the "Lab QC

Sample" for the medium and laboratory duplicate analysis.

Laboratory quality control samples should be selected from sampling points which are suspected to be moderately contaminated. Label the bottles and all copies of the paperwork as "Lab QC Sample"; the laboratory must know that this sample is for their QC analyses. The first laboratory QC sample of the sampling effort should be part of the first or second day's shipment. Subsequent laboratory QC samples should be spread out over the entire sampling effort.

For water media, 2-3 times the normal sample volume must be collected for the laboratory QC sample. Additional volume is usually not necessary for soil samples.

6.3 Performance System Audits by the Owner/Operator or Respondent

This section should describe any internal performance and/or system audit which the Owner/Operator or Respondent will conduct to monitor the capability and performance of the project. The extent of the audit program should reflect the data quality needs and intended data uses. Audits are used to quickly identify and correct problems thus preventing and/or reducing costly errors. For example, a performance audit could include monitoring field activities to ensure consistency with the workplan. If the audit strategy has already been addressed in a QA program plan or standard operating procedure, cite the appropriate section which contains the information.

7. Data Management

Describe how investigation data and results will be evaluated, documented and managed, including development of an analytical database. State the criteria that will be used by the project team to review and determine the quality of data. To document any quality assurance anomalies, the RFI QC Summary Forms (see Appendix A of this attachment) must be completed by the analytical laboratory and submitted as part of the RFI Report. In

addition, provide examples of any other forms or checklists to be used.

Identify and discuss personnel and data management responsibilities, all field, laboratory and other data to be recorded and maintained, and any statistical methods that may be used to manipulate the data.

8. References

Provide a list of references cited in the RFI Workplan.

C. RCRA Facility Investigation Report

A RFI Report must be prepared that describes the entire site investigation and presents the basic results. The RFI Report must clearly present an evaluation of investigation results (e.g., all potential contaminant source areas must be identified, potential migration pathways must be described, and affected media shown, etc.).

The RFI Report must also include an evaluation of the completeness of the investigation and indicate if additional work is needed. This work could include additional investigation activities and/or interim corrective measures to stabilize contaminant release areas and limit contaminant migration. If additional work is needed, the Owner/Operator or Respondent must submit a Phase 2 RFI Workplan and/or Interim Corrective Measures Workplan must be submitted to the Department along with the RFI Report.

At a minimum, the RFI Report must include:

- o A summary of investigation results (include tables that summarize analytical results).
- o A complete description of the investigation, including all data necessary to understand the project in its entirety including all investigative methods and procedures.
- o A discussion of key decision points encountered and resolved during the course of the investigation.
- o Graphical displays such as isopleths, potentiometric surface maps, cross-sections, plume contour maps (showing concentration levels, isoconcentration contours), facility maps (showing sample locations, etc.) and regional maps (showing receptor areas, water supply wells, etc.) that describe report results. Highlight important facts such as geologic features that may affect contaminant transport.
- o Tables that list all chemistry data for each medium investigated.
- o An analysis of current and existing ground water

data to illustrate temporal changes for both water chemistry and piezometric data (use graphics whenever possible).

- o A description of potential or known impacts on human and environmental receptors from releases at the facility. Depending on the site specific circumstances, this analysis could be based on the results from contaminant dispersion models if field validation is performed.
- o A discussion of any upset conditions that occurred during any sampling events or laboratory analysis that may influence the results. The discussion must include any problems with the chain of custody procedures, sample holding times, sample preservation, handling and transport procedures, field equipment calibration and handling, field blank results that show potential sample contamination and any field duplicate results that indicate a potential problem. Summary tables must be provided that show the upset condition and the samples that could be impacted. The RFI QC Summary Forms (see Appendix A of this attachment) must be completed by the analytical laboratory and submitted as part of the RFI Report.
- o Assessment of the entire QA/QC program effectiveness.
- o Data validation results should be documented in the RFI Report.
- o Discussion of deviations from the approved RFI Workplan.
- o Provide copies of field data sheets, including field log book.

In addition to the RFI Report, the Department may require the Owner/Operator or Respondent to submit the analytical results (database) on a floppy disk (Department will specify the format). All raw laboratory and field data (e.g., analytical reports) must be kept at the facility and be made available or sent to the Department upon request.

ATTACHMENT 2

SCOPE OF WORK FOR HEALTH AND SAFETY PLAN

The Department of Toxic Substances Control (Department) may require that the Owner/Operator or Respondent prepare a Health and Safety Plan for any corrective action field activity (e.g., soil or ground water sampling, drilling, construction, operation and maintenance of a treatment system, etc.). The Health and Safety Plan must, at a minimum, include the following elements:

1. Objectives

Describe the goals and objectives of the Health and Safety Plan (must apply to on-site personnel and visitors). The Health and Safety Plan must be consistent with the facility Contingency Plan, OSHA Regulations, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985), all state and local regulations and other Department guidance as provided.

2. Hazard Assessment

List and describe the potentially hazardous substances that could be encountered by field personnel during field activities.

Discuss the following:

- o Inhalation Hazards
- o Dermal Exposure
- o Ingestion Hazards
- o Physical Hazards
- o Overall Hazard Rating

Include a table that, at a minimum, lists: Known Contaminants, Highest Observed Concentration, Media, Symptoms/Effects of Acute Exposure.

3. Personal Protection/Monitoring Equipment

For each field task, describe personal protection levels and identify all monitoring equipment.

Describe any action levels and corresponding response actions (i.e., when will levels of safety be upgraded).

Describe decontamination procedures and areas.

4. Site Organization and Emergency Contacts

List and identify all contacts (include phone numbers). Identify the nearest hospital and provide a regional map showing the shortest route from the facility to the hospital. Describe site emergency procedures and any site safety organizations. Include evacuation procedures for neighbors (where applicable).

Include a facility Map showing emergency station locations (first aid, eye wash areas, etc.).

ATTACHMENT 3

COMMUNITY PROFILE OUTLINE

FOR TRW Inc.

The following items should be included in the Community Profile:

SITE DESCRIPTION

Description of proposed project.

Map.

Description of the site/facility location.

Description of the surrounding land uses and environmental resources (including proximity to residential housing, schools, churches, etc.).

Visibility of the site to neighbors.

Demographics of community in which the site is located (e.g., socioeconomic level, ethnic composition, specific language considerations, etc.). This information may be found in local libraries (e.g., census records).

LOCAL INTEREST

Contacts with community members - any inquiries from community members, groups, organizations, etc. (include names, phone numbers, and addresses on the key contact list).

Community interactions - any current meetings, events, presentations, etc.

Media coverage - any newspaper, magazine, television, etc., coverage.

Government contacts - city and county staff, state and local elected officials.

KEY CONTACT LIST

Names, addresses, and phone numbers of city manager, city/county planning department staff, local elected officials, and other community members with whom previous contact has been made.

PAST PUBLIC INVOLVEMENT ACTIVITIES

Any ad hoc committees, community meetings, workshops, letters, newsletters, etc., about the site or similar activity.

KEY ISSUES AND CONCERNS

Any specific concerns/issues raised by the community regarding the site/facility or any activities performed on the site/facility.

Any anticipated concerns/issues regarding the site/facility.

Any general environmental concerns/issues in the community.

PP Review _____ Date _____

Project Title TRW, Inc.
 Project Name: RCRA Facility Investigation Work
 Contact: Doug Pennington
 Billing Address: One Space park, Redondon Beach, California 90278
 Contact Tel. #: (310) 813-2688

December 14, 2001

EXHIBIT A (pg 1)

COST ESTIMATE FOR RFI WORKPLAN REVIEW & OVERSIGHT

Code	Classification	Staff Hours	HWMP Hourly Rate + Indirect @ 196.54%	Staff Cost	Totals
PERMITTING					
3564	Haz. Sub. Scientist	0.0	107	\$0	
3726	Haz. Sub. Engineer	60.0	119	7,140	
3566	Sup. Haz. Sub. Sci. I	2.0	124	248	
3723	Sup. Haz. Sub. Sci. II	0.0	142	0	
3724	Sup. Haz. Sub. Eng. I	0.0	131	0	
3723	Sup. Haz. Sub. Eng. II	0.0	143	0	
1139	Office Technician (T)	2.0	60	120	
	Total				\$7,508
REGIONAL CHEMISTRY SUPPORT					
3565	Sr. Haz. Sub. Scientist	2.0	124	248	
	Total				248
REGIONAL GEOLOGY SUPPORT					
3728	Haz. Sub. Eng. Geologist	25.0	113	2,825	
3730	Sup. Haz. Sub. Eng. Geo. I	1.0	131	131	
	Total				2,956
OFFICE OF SCIENTIFIC AFFAIRS					
7978	Staff Toxicologist	8.0	146	1,168	
7984	Senior Toxicologist		153	0	
	Total				1,168
OFFICE OF LEGAL COUNSEL					
5778	Staff Counsel		149	0	
	Total				0
PUBLIC PARTICIPATION					
5373	Public Participation, Spec.	20.0	101	2,020	
5372	Public Participation, Sup.	3.0	110	330	
	Total				2,350
PROGRAM AUDITS & ENVIRONMENTAL ANALYSIS					
4711	Assoc. Env. Planner	0.0	106	0	
4713	Sr. Env. Planner	0.0	126	0	
	Total				0
OTHER					
3856	Assoc. Industrial Hygienist	5.0	112	560	
3887	Air Pollution Specialist		108	0	
3724	Sup. Haz. Sub. Eng. I (ESU)	1.0	131	131	
	Total				691
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				\$14,921	\$14,921

Project Title: RCRA Facility Investigation Report
 Applicant's Name: TRW, Inc.
 Contact: Doug Pennington
 Billing Address: One Space Park, Redondon Beach, California 90278
 Contact Tel. #: (310) 813-2688

EXHIBIT A (pg2)

COST ESTIMATE FOR RFI OVERSIGHT & REPORT REVIEW

Code	Classification	Staff Hours	HWMP Hourly Rate + Indirect @ 196.54%	Staff Cost	Totals
PERMITTING					
3564	Haz. Sub. Scientist	0.0	107	\$0	
3726	Haz. Sub. Engineer	50.0	119	5,950	
3566	Sup. Haz. Sub. Sci. I	2.0	124	248	
3723	Sup. Haz. Sub. Sci. II	0.0	142	0	
3724	Sup. Haz. Sub. Eng. I	0.0	131	0	
3723	Sup. Haz. Sub. Eng. II	0.0	143	0	
1139	Office Technician (T)	2.0	60	120	
	Total				\$6,318
REGIONAL CHEMISTRY SUPPORT					
3565	Sr. Haz. Sub. Scientist	0.0	124	0	
	Total				0
REGIONAL GEOLOGY SUPPORT					
3728	Haz. Sub. Eng. Geologist	20.0	113	2,260	
3730	Sup. Haz. Sub. Eng. Geo. I	2.0	131	262	
	Total				2,522
OFFICE OF SCIENTIFIC AFFAIRS					
7978	Staff Toxicologist	10.0	146	1,460	
7984	Senior Toxicologist		153	0	
	Total	2.0			1,460
OFFICE OF LEGAL COUNSEL					
5778	Staff Counsel	0.0	149	0	
	Total				0
PUBLIC PARTICIPATION					
5373	Public Participation, Spec.	10.0	101	1,010	
5372	Public Participation, Sup.	1.0	110	110	
	Total				1,120
PROGRAM AUDITS & ENVIRONMENTAL ANALYSIS					
4711	Assoc. Env. Planner	0.0	106	0	
4713	Sr. Env. Planner		126	0	
	Total				0
OTHER					
3856	Assoc. Industrial Hygienist	0.0	112	0	
3887	Air Pollution Specialist	0.0	108	0	
3724	Sup. Haz. Sub. Eng. I (ESU)	0.0	131	0	
	Total				0
				-----	-----
				\$11,420	\$11,420