

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

In the Matter of:) Docket No. HWCA P3-00/01-010
)
)
MARTIN METALS FINISHING INC.)
)
US EPA ID No.: CAD 059794974)
)
)
CHEMICAL TECHNOLOGY)
LABORATORIES)
)
US EPA ID No.: CAD 008275885)
)
)
PROCESSES BY MARTIN)
)
)
12150 South Alameda Street)
Lynwood, California 90262)
)
)
MARTIN ENTERPRISES)
)
)
AND)
)
)
PETE MARTIN)
)
)
9611 Garnish Drive)
Downey, California 90240)
)
)
)
ENFORCEMENT ORDER
FOR CORRECTIVE ACTION
Health and Safety Code
Section 25187
)
)
)
Respondents.)
)
_____)

INTRODUCTION

1.1. Parties. The State Department of Toxic Substances Control (DTSC or Department) issues this Enforcement Order for Corrective Action (Order) to Martin Metals Finishing, Inc., Chemical Technology Laboratory, Martin Enterprises, Processes by Martin, and Pete Martin (Respondents).

1.1.2 Mr. Pete Martin is the owner and operator of the Martin Metal Finishing, Inc. and Chemical Technology Laboratories, both Interim Status Documented (ISD) hazardous waste management facilities ("Facility"), which have operated at the same

1 address and are both in the process of closure. Mr. Pete Martin is also the owner of
2 Processes by Martin, a hazardous waste generator, which now operates at the Facility.
3 The Facility consists of one parcel with the following Assessor's description: Map Book
4 6169, Page 017, Parcel 004. This parcel is currently occupied by Processes by Martin but
5 is owned by Martin Enterprises. Martin Enterprises is owned by Pete Martin and is cited in
6 a 1996 Closure Plan as the Facility owner, operator and landowner.

7 I.2. Permitting Status. This Facility is located at 12150 South Alameda
8 Street (See the Facility location map attached as Exhibit 1). The Facility engaged in the
9 management of hazardous waste pursuant to grants of interim status by the Department of
10 Health Services, which was DTSC's predecessor agency, on March 6, 1981. The
11 Respondents ceased operation of Hazardous Waste Management Units(s) (HWMU) in
12 August 1994. Therefore the Facility's authorizations to operate as hazardous waste
13 facilities ended on August 1994.

14 I.3. Jurisdiction. Jurisdiction exists pursuant to Health and Safety Code
15 (HS&C) sections 25187, 25187.1, and 25200.10. H&SC section 25187 authorizes DTSC
16 to issue an order to require corrective action when DTSC determines that there is or has
17 been a release of hazardous waste or hazardous waste constituents into the environment
18 from a hazardous waste facility. If DTSC determines that the presence of any hazardous
19 waste at a facility or site at which hazardous waste is, or has been, stored, treated, or
20 disposed of, or the release of any hazardous waste from the facility or site may present a
21 substantial hazard to human health or the environment, H&SC section 25187.1 authorizes
22 DTSC to issue an order requiring the owner or operator of a facility or site to conduct
23 monitoring, testing, analysis, and reporting with respect to the facility or site which DTSC
24 deems reasonable to ascertain the nature and extent of the hazard.

25 H&SC section 25200.10 mandates that DTSC require corrective action for all
26 releases of hazardous waste or constituents from a solid waste management unit or a
27 hazardous waste management unit at a facility engaged in hazardous waste management.

1 Consultants in May 1986 and April 1988, and Phase II site investigations by Geraghty and
2 Miller, Inc. in July and September, 1988, revealed MEK in two on-site monitoring wells at
3 concentrations ranging up to 80,000 Fg/l of MEK and 10,000 Fg/l of toluene. Subsequent
4 groundwater investigation by Lindmark Engineering in January 1996 revealed MEK
5 concentrations of 11 and 15 Fg/l and total petroleum hydrocarbons as gasoline
6 concentrations up to 940 Fg/l. Based on the submitted data and information, releases
7 occurred to both soil and ground water at these two USTs and they are considered solid
8 waste management units (SWMUs).

9 Two additional USTs, one 6,000-gallon and 1200-gallon, are reported as having
10 been used to store thinner. The presence of toluene, a major component of thinners, in
11 ground water is an indication of releases from these tanks. A 550-gallon tank of unknown
12 contents (possibly waste oil) was also reported.

13 Groundwater contaminants reported from on-site wells include, MEK, benzene,
14 toluene, tetrachloroethylene (PCE), vinyl chloride (VC), and *cis*-1,2-dichloroethene (*cis*-1,2-
15 DCE).

16 The 1996 Closure Plan indicated that the hazardous waste and hazardous waste
17 constituents of concern managed at the three HWMUs included untreated chromium
18 waste, consisting of paint residue and chlorinated solvents from cleaning activities; dry
19 chromium waste from a chromium conversion process, including zinc and other heavy
20 metals; high boiler waste and residual sludge generated by the distillation unit, consisting
21 primarily of toluene and MEK, but also including acetone, xylenes, naphthalenes and
22 paraffins, esters and glycol ethers, various alcohols, 1,1,1-trichloroethane (TCA), resins,
23 ink and paint pigments, and "inert solids". An "Environmental Priorities Initiative
24 Preliminary Assessment" was prepared on April 9, 1991, by IFC Technology, Inc., for the
25 U.S. Environmental Protection Agency (U.S. EPA).

26 2.2. The SWMUs and AOC are shown on the map attached as Exhibit 2 and
27 specified as follows:

28 SWMU-1: 10,000-gallon MEK UST;

- 1 SWMU-2: 10,000-gallon gasoline UST;
2 SWMU-3: 6000-gallon thinner UST;
3 SWMU-4: 1200-gallon thinner UST
4 SWMU-5: 550-gallon UST (unknown contents)
5 SWMU-6: PCE-contaminated northeastern portion of site (unknown
6 origin). Automatic Sprayer Washer Floor Area identified in
7 "Environmental Priorities Initiative Preliminary Assessment", April 9,
8 1991.
9 SWMU-7 New Bermed Hazardous Waste Storage Area
10 AOC-1: Southern California Edison (SCE) transformer.
11 AOC-2 Asbury Environmental Services dirt covered parking area (east end
12 of Facility)
13 AOC-3 Area southwest of MEK and Gasoline tanks where excavated soil
14 was stockpiled.

15
16 2.3. Based on the reports cited above, DTSC concludes that further
17 investigation is needed, at minimum, to determine the nature and extent of contamination
18 associated with the SWMUs and the AOCs listed in section 2.2.

19 2.4. Hazardous wastes or hazardous waste constituents have migrated or
20 may migrate from the Facility into the environment through the following pathways: soil,
21 surface water, ground water, and air.

22 2.5. The Facility is located within that portion of the Central Groundwater
23 Basin known as the Central Basin Pressure Area. The 1996 Closure Plan indicated that
24 ground water beneath the site is as shallow as 36 feet below ground surface (bgs) and
25 described this uppermost saturated zone as a semi-perched aquifer with the materials
26 encountered below the saturation as being part of the Bellflower Aquitard. However, both
27 the 1996 Closure Plan and the 1991 PA prepared by ICF, recognized that the aquitard is
28 not continuous in the area and that the so-called semi-perched zone may be hydraulically

1 interconnected with the Gaspar Aquifer. Hydraulic continuity with the deeper aquifer units,
2 such as the Exposition and Gage or the Hollydale, Lynwood, Silverado and Sunnyside, is
3 unknown.

4 The local ground water flow pattern in the uppermost saturated unit is reported as east-
5 northeast. The Basin Plan of the Los Angeles Regional Water Quality Control Board
6 (LARWQCB, June 13, 1994) indicated that ground water is beneficial for municipal uses.
7 City of Lynwood public drinking water wells 11 and 19 are located within a quarter of a mile
8 to the east-northeast and west-northwest of the site, respectively. An unused City of
9 Compton well is located approximately 500 feet southeast of the site.

10 2.6. Releases from the Facility have migrated through the vadose zone to
11 ground water at the Facility as demonstrated by vadose zone and groundwater
12 investigations cited in 2.1.

13

14 WORK TO BE PERFORMED

15 3. Based on the foregoing FINDINGS OF FACT, IT IS HEREBY ORDERED
16 THAT:

17 3.1. Respondents shall perform the work required by this Order in a manner
18 consistent with: the attached Scopes of Work; DTSC-approved RCRA Facility
19 Investigation (RFI) Workplan, Corrective Measures Study (CMS) Workplan, Corrective
20 Measures Implementation (CMI) Workplan, and any other DTSC-approved Workplans;
21 H&SC and other applicable state and federal laws and their implementing regulations; and
22 applicable DTSC or U.S. EPA guidance documents. Applicable guidance documents
23 include, but are not limited to, the "RCRA Facility Investigation (RFI) Guidance" (Interim
24 Final, May 1989, EPA 530/SW-89-031), "RCRA Groundwater Monitoring Technical
25 Enforcement Guidance Document" (OSWER Directive 9950.1, September 1986), "Test
26 Methods For Evaluating Solid Waste" (SW-846), "Construction Quality Assurance for
27 Hazardous Waste Land Disposal Facilities" (EPA 530/SW-85-031, July 1986) and
28 "Corrective Action Orientation Manual" (Draft Working copy, June 1994, DTSC).

1 3.2. Interim Measures (IM).

2 3.2.1. Respondents shall evaluate available data and assess the need for
3 interim measures in addition to those specifically required by this Order. Interim measures
4 shall be used whenever possible to control or abate immediate threats to human health
5 and/or the environment, and to prevent and/or minimize the spread of contaminants while
6 long-term corrective action alternatives are being evaluated.

7 3.2.2. Respondents shall submit a Current Conditions Report to DTSC in
8 accordance with Section 3.3.1. of this Order. The Current Conditions Report shall contain
9 an assessment of any interim measures. The assessment must include both previously
10 implemented interim measures and other interim measures that could be implemented at
11 the Facility. The assessment must also identify additional data needed for making
12 decisions on interim measures. This new data or information shall be collected during the
13 early stages of the RFI. DTSC will review the Respondents' assessment and determine
14 which interim measures, if any, Respondents will implement at the Facility. If deemed
15 appropriate by DTSC, such determination may be deferred until additional data are
16 collected.

17 3.2.3. In the event Respondents identify an immediate or potential threat to
18 human health and/or the environment, discover new releases of hazardous waste and/or
19 hazardous waste constituents, or discover new solid waste management units not
20 previously identified, Respondents shall notify the DTSC Project Coordinator orally within
21 48 hours of discovery and notify DTSC in writing within ten (10) calendar days of discovery
22 summarizing the findings, including the immediacy and magnitude of the potential threat to
23 human health and/or the environment. Within thirty (30) calendar days of receiving DTSC's
24 written request, Respondents shall submit to DTSC an IM Workplan for approval. In some
25 instances, where interim measures must be implemented quickly to prevent harm to human
26 health and the environment, DTSC may reduce or limit the elements of or requirement for
27 the submittal of workplans and specifications. The IM Workplan shall include a schedule
28 for submitting to DTSC an IM Operation and Maintenance (O&M) Plan and IM Plans and

1 Specifications (P&S). The IM Workplan, IM O&M Plan, and IM P&S shall be developed in
2 a manner consistent with the Scope of Work for Interim Measures Implementation
3 appended as Attachment A. If DTSC determines that immediate action is required, the
4 DTSC Project Coordinator may orally authorize the Respondents to act prior to DTSC's
5 receipt of the IM Workplan.

6 3.2.4. If DTSC identifies an immediate or potential threat to human health
7 and/or the environment, discovers new releases of hazardous waste and/or hazardous
8 waste constituents, or discovers new solid waste management units not previously
9 identified, DTSC will notify Respondents in writing. Within thirty (30) calendar days of
10 receiving DTSC's written notification, Respondents shall submit to DTSC for approval an
11 IM Workplan that identifies Interim Measures that will mitigate the threat. In some
12 instances, where interim measures must be implemented quickly to prevent harm to human
13 health and the environment, DTSC may reduce or limit the elements of or requirement for
14 the submittal of workplans and specifications. The IM Workplan shall include a schedule
15 for submitting to DTSC an IM Operation and Maintenance (O&M) Plan and IM Plans and
16 Specifications (P&S). The IM Workplan, IM O&M Plan, and IM P&S shall be developed in
17 a manner consistent with the Scope of Work for Interim Measures Implementation
18 appended as Attachment A. If DTSC determines that immediate action is required, the
19 DTSC Project Coordinator may orally authorize the Respondents to act prior to DTSC's
20 receipt of the IM Workplan.

21 3.2.5. All IM Workplans shall ensure that the Interim Measures are designed
22 to mitigate current or potential threats to human health and/or the environment, and should,
23 to the extent practicable, be consistent with the objectives of, and contribute to the
24 performance of, any remedy which may be required at the Facility.

25 3.2.6. Concurrent with the submission of an IM Workplan, Respondents shall
26 submit to DTSC a Health and Safety Plan in accordance with the Scope of Work for a
27 Health and Safety Plan, Attachment B.

28

1 3.2.7. Concurrent with the submission of an IM Workplan, Respondents
2 shall submit to DTSC a Community Profile for DTSC approval in accordance with
3 Attachment D. Based on the information provided in the Community Profile, if DTSC
4 determines that there is a high level of community concern about the Facility, DTSC may
5 require Respondents to prepare a Public Participation Plan.

6 3.3. RCRA Facility Investigation (RFI).

7 3.3.1. Within sixty (60) calendar days of the effective date of this Order,
8 Respondents shall submit to DTSC a Current Conditions Report and a Workplan for a
9 RCRA Facility Investigation ("RFI Workplan"). The Current Conditions Report and RFI
10 Workplan are subject to approval by DTSC and shall be developed in a manner consistent
11 with the Scope of Work for a RCRA Facility Investigation contained in Attachment C.
12 DTSC will review the Current Conditions Report and RFI Workplan and notify Respondents
13 in writing of DTSC's approval or disapproval.

14 3.3.2. The RFI Workplan shall detail the methodology to: (1) gather data
15 needed to make decisions on interim measures/ stabilization during the early phases of
16 the RCRA Facility Investigation; (2) identify and characterize all sources of contamination;
17 (3) define the nature, degree and extent of contamination; (4) define the rate of movement
18 and direction of contamination flow; (5) characterize the potential pathways of contaminant
19 migration; (6) identify actual or potential human and/or ecological receptors; and (7)
20 support development of alternatives from which a corrective measure will be selected by
21 DTSC. A specific schedule for implementation of all activities shall be included in the RFI
22 Workplan.

23 3.3.3. Respondents shall submit an RFI Report to DTSC for approval in
24 accordance with DTSC-approved RFI Workplan schedule. The RFI Report shall be
25 developed in a manner consistent with the Scope of Work for a RCRA Facility
26 Investigation contained in Attachment C. If there is a phased investigation, separate RFI
27 Reports and a report that summarizes the findings from all phases of the RFI must be
28

1 submitted to DTSC. DTSC will review the RFI Report(s) and notify Respondents in writing
2 of DTSC's approval or disapproval.

3 3.3.4. Concurrent with the submission of a RFI Workplan, Respondents shall submit to
4 DTSC a Health and Safety Plan in accordance with Attachment B. If Workplans for both an
5 IM and RFI are required by this Order, Respondents may submit a single Health and Safety
6 Plan that addresses the combined IM and RFI activities.

7 3.3.5. Respondents shall submit a RFI Summary Fact Sheet to DTSC that
8 summarizes the findings from all phases of the RFI. The RFI Summary Fact Sheet shall be
9 submitted to DTSC in accordance with the schedule contained in the approved RFI
10 Workplan. DTSC will review the RFI Summary Fact Sheet and notify Respondents in
11 writing of DTSC's approval or disapproval, including any comments and/or modifications.
12 When DTSC approves the RFI Summary Fact Sheet, Respondents shall mail the
13 approved RFI Summary Fact Sheet to all individuals on the Facility mailing list established
14 pursuant to 22 Cal. Code Regs. section 66271.9(c)(1)(D), within fifteen (15) calendar days
15 of receipt of written approval.

16 3.3.6. Concurrent with the submission of a RFI Workplan, Respondents shall
17 submit to DTSC a Community Profile for DTSC approval in accordance with Attachment
18 D. Based on the information provided in the Community Profile, if DTSC determines that
19 there is a high level of community concern about the Facility, DTSC may require
20 Respondents to prepare a Public Participation Plan.

21 3.4. Corrective Measures Study (CMS).

22 3.4.1. Respondents shall prepare a Corrective Measures Study if
23 contaminant concentrations exceed current health-based action levels and/or if DTSC
24 determines that the contaminant releases pose a potential threat to human health and/or
25 the environment. Health-based contaminant concentrations in air, soil (residential and
26 industrial), and water can be used for risk screening purposes, as possible triggers for
27 further action (e.g., corrective measures study), and as starting points for determining site-
28 specific cleanup levels. The soil contaminant concentrations for residential use should be

1 used as a trigger point for requiring a CMS. A cumulative Health Risk Assessment may
2 be required for operating facilities (e.g., off-site facility) to establish cleanup levels.

3 3.4.2. Within thirty (30) calendar days of the earlier of DTSC's approval of
4 the RFI Report or of Respondents' receipt of a written request from DTSC, Respondents
5 shall submit a CMS Workplan to DTSC. The CMS Workplan is subject to approval by
6 DTSC and shall be developed in a manner consistent with the Scope of Work for a
7 Corrective Measures Study contained in Attachment E.

8 3.4.3. The CMS Workplan shall detail the methodology for developing and
9 evaluating potential corrective measures to remedy any contamination at the Facility. The
10 CMS Workplan shall identify the potential corrective measures, including any innovative
11 technologies, that may be used for the containment, treatment, remediation, and/or
12 disposal of contamination.

13 3.4.4. Respondents shall prepare treatability studies for all potential
14 corrective measures that involve treatment except where Respondent can demonstrate to
15 DTSC's satisfaction that they are not needed. The CMS Workplan shall include, at a
16 minimum, a summary of the proposed treatability study including a conceptual design, a
17 schedule for submitting a treatability study workplan, or Respondents' justification for not
18 proposing a treatability study.

19 3.4.5. Respondents shall submit a CMS Report to DTSC for approval in
20 accordance with DTSC-approved CMS Workplan schedule. The CMS Report shall be
21 developed in a manner consistent with the Scope of Work for a Corrective Measures
22 Study contained in Attachment E. DTSC will review the CMS Report and notify
23 Respondents in writing of DTSC's approval or disapproval.

24 3.5. Remedy Selection.

25 3.5.1. DTSC will provide the public with an opportunity to review and
26 comment on the final draft of the CMS Report, DTSC's proposed corrective measures for
27 the Facility, and DTSC's justification for selection of such corrective measures.
28

1 3.5.2. Following the public comment period, DTSC may select final
2 corrective measures or require Respondents to revise the CMS Report and/or perform
3 additional corrective measures studies.

4 3.5.3. DTSC will notify Respondents of the final corrective measures
5 selected by DTSC in the Final Decision and Response to Comments. The notification will
6 include DTSC's reasons for selecting the corrective measures.

7 3.6. Corrective Measures Implementation (CMI).

8 3.6.1. Within sixty (60) calendar days of Respondents' receipt of notification
9 of DTSC's selection of the corrective measures, Respondents shall submit to DTSC a
10 Corrective Measures Implementation (CMI) Workplan. The CMI Workplan is subject to
11 approval by DTSC and shall be developed in a manner consistent with the Scope of Work
12 for Corrective Measures Implementation contained in Attachment F.

13 3.6.2. Concurrent with the submission of a CMI Workplan, Respondents
14 shall submit to DTSC a Health and Safety Plan in accordance with Attachment B.

15 3.6.3. Concurrent with the submission of a CMI Workplan, Respondents
16 shall submit to DTSC a Community Profile for DTSC approval in accordance with
17 Attachment D. Based on the information provided in the Community Profile, if DTSC
18 determines that there is a high level of community concern about the Facility, DTSC may
19 require Respondents to prepare a Public Participation Plan.

20 3.6.4. The CMI program shall be designed to facilitate the design,
21 construction, operation, maintenance, and monitoring of corrective measures at the
22 Facility. In accordance with the schedule contained in the approved CMI Workplan,
23 Respondents shall submit to DTSC the documents listed below. These documents shall
24 be developed in a manner consistent with the Scope of Work for Corrective Measures
25 Implementation contained in Attachment F.

- 26 o Operation and Maintenance Plan
- 27 o Draft Plans and Specifications
- 28 o Final Plans and Specifications

- 1 o Construction Workplan
- 2 o Construction Completion Report
- 3 o Corrective Measures Completion Report

4 3.6.5. DTSC will review all required CMI documents and notify Respondents
5 in writing of DTSC's approval or disapproval.

6 3.6.6. As directed by DTSC, Respondents shall establish a financial
7 assurance mechanism for Corrective Measures Implementation. The financial assurance
8 mechanisms may include a performance or surety bond, liability insurance, an escrow
9 performance guarantee account, a trust fund, financial test, or corporate guarantee as
10 described in 22 Cal. Code Regs. section 66265.143 or any other mechanism acceptable
11 to DTSC. The mechanism shall be established to allow DTSC access to the funds to
12 undertake Corrective Measures Implementation tasks if Respondents are unable or
13 unwilling to undertake the required actions.

14

15 OTHER REQUIREMENTS AND PROVISIONS

16 4.1. Project Coordinator. Within fourteen (14) days of the effective date of
17 this Order, DTSC and Respondents shall each designate a Project Coordinator and shall
18 notify each other in writing of the name of the Project Coordinator selected. Each Project
19 Coordinator shall be responsible for overseeing the implementation of this Order and for
20 designating a person to act in his/her absence. All communications between
21 Respondents and DTSC, and all documents, report approvals, and other correspondence
22 concerning the activities performed pursuant to this Order shall be directed through the
23 Project Coordinators. Each party may change its Project Coordinator with at least seven
24 (7) days prior written notice.

25 4.2. Department Approval.

26 4.2.1. Respondents shall revise any workplan, report, specification, or
27 schedule in accordance with DTSC's written comments. Respondents shall submit to
28

1 DTSC any revised documents by the due date specified by DTSC. Revised submittals
2 are subject to DTSC's approval or disapproval.

3 4.2.2. Upon receipt of DTSC's written approval, Respondents shall
4 commence work and implement any approved workplan in accordance with the schedule
5 and provisions contained therein.

6 4.2.3. Any DTSC-approved workplan, report, specification, or schedule
7 required by this Order shall be deemed incorporated into this Order.

8 4.2.4. Verbal advice, suggestions, or comments given by DTSC
9 representatives will not constitute an official approval or decision.

10 4.3. Submittals.

11 4.3.1. Beginning with the first full month following the effective date of this
12 Order, Respondents shall provide DTSC with bi-monthly progress reports of corrective
13 action activities conducted pursuant to this Order. Progress reports are due on the 10th
14 day of the month when reports are due. The progress reports shall conform to the Scope
15 of Work for Progress Reports contained in Attachment C. DTSC may adjust the frequency
16 of progress reporting to be consistent with site-specific activities.

17 4.3.2. Any report or other document submitted by Respondents pursuant to
18 this Order shall be signed and certified by the project coordinator, a responsible corporate
19 officer, or a duly authorized representative.

20 4.3.3. The certification required above, shall be in the following form:

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

26 Signature: _____
27 Name: _____
28 Title: _____
Date: _____

29 4.3.4. Respondents shall provide three copies of all documents, including
30 but not limited to, workplans, reports, and correspondence of fifteen (15) pages or longer.

1 Submittals specifically exempted from this copy requirement are all progress reports and
2 correspondence of less than 15 pages, of which one copy is required.

3 4.3.5. Unless otherwise specified, all reports, correspondence, approvals,
4 disapprovals, notices, or other submissions relating to this Order shall be in writing and
5 shall be sent to the current Project Coordinators.

6 4.4. Proposed Contractor/Consultant.

7 All work performed pursuant to this Order shall be under the direction and
8 supervision of a professional engineer or registered geologist, registered in California,
9 with expertise in hazardous waste site cleanup. Respondents' contractor or consultant
10 shall have the technical expertise sufficient to fulfill his or her responsibilities. Within
11 fourteen (14) days of the effective date of this Order, Respondents shall notify the DTSC
12 Project Coordinator in writing of the name, title, and qualifications of the professional
13 engineer or registered geologist and of any contractors or consultants and their personnel
14 to be used in carrying out the requirements of this Order. DTSC may disapprove of
15 Respondents' contractor and/or consultant.

16 4.5. Quality Assurance.

17 4.5.1. All sampling and analyses performed by Respondents under this
18 Order shall follow applicable DTSC and U.S. EPA guidance for sampling and analysis.
19 Workplans shall contain quality assurance/quality control and chain of custody procedures
20 for all sampling, monitoring, and analytical activities. Any deviations from the approved
21 workplans must be approved by DTSC prior to implementation, must be documented,
22 including reasons for the deviations, and must be reported in the applicable report (e.g.,
23 RFI Report).

24 4.5.2. The names, addresses, and telephone numbers of the California
25 State certified analytical laboratories Respondents propose to use must be specified in
26 the applicable workplans.

27
28

1 4.5.3. All workplans required under this Order shall include data quality
2 objectives for each data collection activity to ensure that data of known and appropriate
3 quality are obtained and that data are sufficient to support their intended uses.

4 4.5.4. Respondents shall monitor to ensure that high quality data are
5 obtained by its consultant or contract laboratories. Respondents shall ensure that
6 laboratories used by Respondents for analysis perform such analysis according to the
7 latest approved edition of "Test Methods for Evaluating Solid Waste, (SW846)", or other
8 methods deemed satisfactory to DTSC. If methods other than U.S. EPA methods are to
9 be used, Respondents shall specify all such protocols in the applicable workplan (e.g., RFI
10 Workplan). DTSC may reject any data that do not meet the requirements of the approved
11 workplan, U.S. EPA analytical methods, or quality assurance/quality control procedures,
12 and may require resampling and analysis.

13 4.5.5. Respondents shall ensure that the California State certified
14 laboratories used by Respondents for analyses have a quality assurance/quality control
15 program. DTSC may conduct a performance and quality assurance/quality control audit of
16 the laboratories chosen by Respondents before, during, or after sample analyses. Upon
17 request by DTSC, Respondents shall have its selected laboratory perform analyses of
18 samples provided by DTSC to demonstrate laboratory performance. If the audit reveals
19 deficiencies in a laboratory's performance or quality assurance/quality control procedures,
20 resampling and analysis may be required.

21 4.6. Sampling and Data/Document Availability.

22 4.6.1. Respondents shall submit to DTSC upon request the results of all
23 sampling and/or tests or other data generated by its employees, agents, consultants, or
24 contractors pursuant to this Order.

25 4.6.2. Notwithstanding any other provisions of this Order, DTSC retains all
26 of its information gathering and inspection authority and rights, including enforcement
27 actions related thereto, under H&SC, and any other state or federal statutes or
28 regulations.

1 4.6.3. Respondents shall notify DTSC in writing at least seven (7) days prior
2 to beginning each separate phase of field work approved under any workplan required by
3 this Order. If Respondents believe they must commence emergency field activities without
4 delay, Respondents may seek emergency telephone authorization from DTSC Project
5 Coordinator or, if the Project Coordinator is unavailable, his/her Branch Chief, to
6 commence such activities immediately.

7 4.6.4. At the request of DTSC, Respondents shall provide or allow DTSC or
8 its authorized representative to take split or duplicate samples of all samples collected by
9 Respondents pursuant to this Order. Similarly, at the request of Respondents, DTSC shall
10 allow Respondents or its authorized representative to take split or duplicate samples of all
11 samples collected by DTSC under this Order.

12 4.7. Access.

13 4.7.1. Subject to the Facility's security and safety procedures, Respondents
14 shall provide DTSC and its representatives access at all reasonable times to the Facility
15 and any other property to which access is required for implementation of this Order and
16 shall permit such persons to inspect and copy all records, files, photographs, documents,
17 including all sampling and monitoring data, that pertain to work undertaken pursuant to this
18 Order and that are within the possession or under the control of Respondents or their
19 contractors or consultants.

20 4.7.2. To the extent that work being performed pursuant to this Order must
21 be done beyond the Facility property boundary, Respondents shall use its best efforts to
22 obtain access agreements necessary to complete work required by this Order from the
23 present owners of such property within thirty (30) days of approval of any workplan for
24 which access is required. Best efforts as used in this paragraph shall include, at a
25 minimum, a letter by certified mail from the Respondent to the present owners of such
26 property requesting an agreement to permit Respondents and DTSC and its authorized
27 representatives access to such property and offering the payment by Respondents of
28 reasonable sums of money in consideration of granting access. Any such access

1 agreement shall provide for access to DTSC and its representatives. Respondents shall
2 provide DTSC's Project Coordinator with a copy of any access agreements. In the event
3 that an agreement for access is not obtained within thirty (30) days of approval of any
4 workplan for which access is required, or of the date that the need for access becomes
5 known to Respondents, Respondents shall notify DTSC in writing within fourteen (14) days
6 thereafter regarding both the efforts undertaken to obtain access and its failure to obtain
7 such agreements. DTSC may, at its discretion, assist Respondents in obtaining access.

8 4.7.3. Nothing in this section limits or otherwise affects DTSC's right of
9 access and entry pursuant to any applicable state or federal law or regulation.

10 4.7.4. Nothing in this Order shall be construed to limit or otherwise affect
11 Respondents' liability and obligation to perform corrective action including corrective
12 action beyond the Facility boundary.

13 4.8. Record Preservation.

14 4.8.1. Respondents shall retain, during the implementation of this Order and
15 for a minimum of six (6) years thereafter, all data, records, and documents that relate in any
16 way to the implementation of this Order or to hazardous waste management and/or
17 disposal at the Facility. Respondents shall notify DTSC in writing ninety (90) days prior to
18 the destruction of any such records, and shall provide DTSC with the opportunity to take
19 possession of any such records. Such written notification shall reference the effective
20 date, caption, and docket number of this Order and shall be addressed to:

21 Jose Kou, Chief
22 Southern California Permitting Branch
23 Department of Toxic Substances Control
24 1011 North Grandview Avenue
25 Glendale, CA 91201

26 4.8.2. If Respondent retains or employs any agent, consultant, or contractor
27 for the purpose of complying with the requirements of this Order, Respondents will require
28 any such agents, consultants, or contractors to provide Respondents a copy of all
documents produced pursuant to this Order.

1 4.8.3. All documents pertaining to this Order shall be stored in a central
2 location at the Facility to afford ease of access by DTSC and its representatives.

3 4.9. Change in Ownership. No change in ownership or corporate or
4 partnership status relating to the Facility shall in any way alter Respondents' responsibility
5 under this Order. No conveyance of title, easement, or other interest in the Facility, or a
6 portion of the Facility, shall affect Respondents' obligations under this Order. Unless
7 DTSC agrees that such obligations may be transferred to a third party, Respondents shall
8 be responsible for and liable for any failure to carry out all activities required of
9 Respondents by the terms and conditions of this Order, regardless of Respondents' use of
10 employees, agents, contractors, or consultants to perform any such tasks.

11 4.10. Notice to Contractors and Successors. Respondents shall provide a
12 copy of this Order to all contractors, laboratories, and consultants retained to conduct or
13 monitor any portion of the work performed pursuant to this Order and shall condition all
14 such contracts on compliance with the terms of this Order. Respondents shall give written
15 notice of this Order to any successor in interest prior to transfer of ownership or operation
16 of the Facility and shall notify DTSC at least seven (7) days prior to such transfer.

17 4.11. Compliance with Applicable Laws. All actions required to be taken
18 pursuant to this Order shall be undertaken in accordance with the applicable requirements
19 of all local, state, and federal laws and regulations. Respondents shall obtain or cause its
20 representatives to obtain all permits and approvals necessary under such laws and
21 regulations.

22 4.12. Costs. Respondents are liable for any costs associated with the
23 implementation of this Order.

24 4.13. Endangerment during Implementation. In the event that DTSC
25 determines that any circumstances or activity (whether or not pursued in compliance with
26 this Order) are creating an imminent or substantial endangerment to the health or welfare
27 of people at the Facility or in the surrounding area or to the environment, DTSC may order
28 Respondents to stop further implementation of this Order for such period of time as

1 needed to abate the endangerment. Any deadline in this Order directly affected by an
2 Order to Stop Work under this section shall be extended for the term of the Order to Stop
3 Work.

4 4.14. Liability. Nothing in this Order shall constitute or be construed as a
5 satisfaction or release from liability for any conditions or claims arising as a result of past,
6 current, or future operations of Respondents. Notwithstanding compliance with the terms
7 of this Order, Respondents may be required to take further actions as are necessary to
8 protect public health or welfare or the environment.

9 4.15. Government Liabilities. The State of California shall not be liable for
10 injuries or damages to persons or property resulting from acts or omissions by
11 Respondents or related parties specified in section 4.19 in carrying out activities pursuant
12 to this Order, nor shall the State of California be held as a party to any contract entered into
13 by Respondents or their agents in carrying out activities pursuant to the Order.

14 4.16. Additional Enforcement Actions. By issuance of this Order, DTSC
15 does not waive the right to take further enforcement actions.

16 4.17. Incorporation of Plans and Reports. All plans, schedules, and reports
17 that require Department approval and are submitted by Respondents pursuant to this
18 Order are incorporated in this Order upon approval by DTSC.

19 4.18. Penalties for Noncompliance. Failure to comply with the terms of this
20 Order may subject Respondents to costs, penalties, and/or punitive damages for any costs
21 incurred by DTSC or other government agencies as a result of such failure, as provided by
22 H&SC section 25188 and other applicable provisions of law.

23 4.19. Parties Bound. This Order shall apply to and be binding upon
24 Respondents, and its officers, directors, agents, employees, contractors, consultants,
25 receivers, trustees, successors, and assignees, including but not limited to individuals,
26 partners, and subsidiary and parent corporations.

27
28

1 4.20. Compliance with Waste Discharge Requirements. Respondents shall
2 comply with all applicable waste discharge requirements issued by the California State
3 Water Resources Control Board or a California Regional Water Quality Control Board.

4 4.21. Submittal Summary. Below is a summary of the major reporting
5 requirements contained in this Order. The summary is provided as a general guide and
6 does not contain all requirements. Please refer to the specific language of this Order for
7 all the requirements.

8	<u>Section</u>	<u>Action</u>	<u>Due Date</u>
9	4.2.2	Implement approved Workplans	In accordance with schedules contained in approved Workplans
10			
11	4.1	Designate Project Coordinator and notify DTSC in writing	14 days from effective date of Order
12			
13	3.2.3	Notify DTSC orally of potential threats to human health	48 hours after discovery
14			
15	3.2.3	Notify DTSC in writing of potential threats to human health	10 days after discovery
16			
17	3.2	Submit Interim Measures Workplan, Health and Safety Plan, and Public Involvement Plan	60 days from effective date of Order
18			
19	3.3	Submit RFI Workplan, Current Conditions Report, Public Involvement Plan, and Health and Safety Plan	60 days from effective date of Order
20			
21	3.4	Submit CMS Workplan	30 days after Department request
22			
23	3.6	Submit CMI Workplan	60 days from receipt of notification of DTSC. DTSC selection of a corrective measure
24			
25	4.3	Submit Progress Reports	First progress report due on 10th day of the month following the effective date of Order. Subsequent reports due every two months thereafter
26			
27			
28			

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

- | | | |
|-----|---|--|
| 4.4 | Notify DTSC in writing of contractors to carry out terms of Order | 14 days from effective date of Order |
| 4.6 | Notify DTSC of when field work starts | 7 days before each phase of field work |

RIGHT TO A HEARING

5. You may request a hearing to challenge the Order. Appeal procedures are described in the attached Statement to Respondent.

EFFECTIVE DATE

6. This Order is final and effective twenty (20) days from the date of mailing, which is the date of the cover letter transmitting the Order to you, unless you request a hearing within the twenty-day period.

Date of Issuance: 6/29/01

/Signed by/
Jose Kou, Branch Chief
Southern California
Permitting Branch
Department of Toxic
Substances Control

1 COMMUNITY PROFILE OUTLINE

2 **FOR**

3 **MARTIN METAL FINISHING**

4 **12150 South Alameda Street, Lynwood, CA 90262,**

5 **EPA ID No. CAD 059 794 974**

6
7 The following items should be included in the Community Profile:

8
9 SITE DESCRIPTION

- 10 - Description of proposed project.
- 11 - Map.
- 12 - Description of the site/facility location.
- 13 - Description of the surrounding land uses and environmental resources (including
- 14 proximity to residential housing, schools, churches, etc.).
- 15 - Visibility of the site to neighbors.
- 16 - Demographics of community in which the site is located (e.g., socioeconomic
- 17 level, ethnic composition, specific language considerations, etc.). This
- 18 information may be found in local libraries (e.g., census records).

19
20 LOCAL INTEREST

- 21 - Contacts with community members - any inquiries from community
- 22 members, groups, organizations, etc. (include names, phone numbers, and
- 23 addresses on the key contact list).
- 24 - Community interactions - any current meetings, events, presentations, etc.
- 25 - Media coverage - any newspaper, magazine, television, etc., coverage.
- 26 - Government contacts - city and county staff, state and local elected officials.

1 KEY CONTACT LIST

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

5

6 PAST PUBLIC INVOLVEMENT ACTIVITIES

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

9

10 KEY ISSUES AND CONCERNS

- 11 - Any specific concerns/issues raised by the community regarding the
12 site/facility or any activities performed on the site/facility.
13 - Any anticipated concerns/issues regarding the site/facility.
14 - Any general environmental concerns/issues in the community.

15

16 PP Review _____ Date _____

17

18

19

20

21

22

23

24

25

26

27

28

1 bcc: Regional Coordinator in issuing Regional Permit
2 HQ Permitting Branch Chief
3 Local Hazardous Waste Program (at Branch Chief option)
4 Regional board (where there are groundwater violations)
5 District Attorney/County Attorney (at Branch Chief option)
6 EPA Region IX (only where EPA has involved in case)
7 Other agencies involved in case
8 Site Mitigation (at Branch Chief option)
9 James Grace

10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

ATTACHMENT ____

ATTACHMENT A

SCOPE OF WORK FOR INTERIM MEASURES IMPLEMENTATION

PURPOSE

Interim measures are actions to control and/or eliminate releases of hazardous waste and/or hazardous constituents from a facility prior to the implementation of a final corrective measure. Interim measures must be used whenever possible to achieve the goal of stabilization which is to control or abate threats to human health and/or the environment, and to prevent or minimize the spread of contaminants while long-term corrective action alternatives are being evaluated.

SCOPE

The documents required for Interim Measures (IM) are, unless the Department of Toxic Substances Control (DTSC) specifies otherwise, an IM Workplan, an Operation and Maintenance Plan and IM Plans and Specifications. 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 DTSC, that a plan or portions thereof are not needed in the given site specific situation, then DTSC may waive that requirement.

The scope and substance of interim measures should be focused to fit the site specific situation and be balanced against the need to take quick action.

DTSC may require the Owner/Operator or Respondent to conduct additional studies beyond what is discussed in the SOWs in order to support the IM program. The Owner/Operator or Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks.

A. Interim Measures Workplan

The Owner/Operator or Respondent shall prepare an IM Workplan that evaluates interim measure options and clearly describes the proposed interim measure, the key components or elements that are needed, describes the designer's vision of the interim measure in the form of conceptual drawings and schematics, and includes procedures and schedules for implementing the interim measure(s). The IM Workplan must be approved by the DTSC prior to implementation. The IM Workplan must, at a minimum, include the following elements:

1. Introduction/Purpose

Describe the purpose of the document and provide a summary of the project.

2. Conceptual Model of Contaminant Migration

It is important to know where the contaminants are and to understand how they are moving before an adequate interim measure can be developed. To address this critical question, the Owner/Operator or Respondent must present a conceptual model of the site and 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 (e.g., water solubility, density, Henry's Law Constant, etc.) 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. This analysis may have already been done as part of earlier work (e.g., Current Conditions Report). If this is the case, then provide a summary of the conceptual model with a reference to the earlier document.

3. Evaluation of Interim Measure Alternatives

List, describe and evaluate interim measure alternatives that have the potential to stabilize the facility. Propose interim measures for implementation and provide rationale for the selection. Document the reasons for excluding any interim measure alternatives.

4. Description of Interim Measures

Qualitatively describe what the proposed interim measure is supposed to do and how it will function at the facility.

5. Data Sufficiency

Review existing data needed to support the design effort and establish whether there are sufficient accurate data available for this purpose. The Owner/Operator or Respondent must summarize the assessment findings

and specify any additional data needed to complete the interim measure design. DTSC may require or the Owner/Operator or Respondent may propose that sampling and analysis plans and/or treatability study workplans be developed to obtain the additional data. Submittal times for any new sampling and analysis plans and/or treatability study workplans must be included in the project schedule.

6. Project Management

Describe the levels of authority and responsibility (include organization chart), lines of communication and a description of the qualifications of key personnel who will direct the interim measure design and implementation effort (including contractor personnel).

7. Project Schedule

The project schedule must specify all significant steps in the process, when any key documents (e.g., plans and specifications, operation and maintenance plan) are to be submitted to DTSC and when the interim measure is to be implemented.

8. Design Basis

Discuss the process and methods used to design all major components of the interim measure. Discuss the significant assumptions made and possible sources of error. Provide justification for the assumptions.

9. Conceptual Process/Schematic Diagrams.

10. Site plan showing preliminary plant layout and/or treatment area.

11. Tables listing number and type of major components with approximate dimensions.

12. Tables giving preliminary mass balances.

13. Site safety and security provisions (e.g., fences, fire control, etc.).

14. Waste Management Practices

Describe the wastes generated by the construction of the interim measure and how they will be managed. Also discuss drainage and indicate how rainwater runoff will be managed.

15. Required Permits

List and describe the permits needed to construct the interim measure. Indicate on the project schedule when the permit applications will be submitted to the applicable agencies and an estimate of the permit issuance date.

16. Sampling and Monitoring

Sampling and monitoring activities may be needed for design and during construction of the interim measure. If sampling activities are necessary, the IM Workplan must include a complete sampling and analysis section which specifies at a minimum the following information:

- a. Description and purpose of monitoring tasks;
- b. Data quality objectives;
- c. Analytical test methods and detection limits;
- d. Name of analytical laboratory;
- e. Laboratory quality control (include laboratory QA/QC procedures in appendices)
- f. Sample collection procedures and equipment;
- g. Field quality control procedures:
 - o duplicates (10% of all field samples)
 - o blanks (field, equipment, etc.)
 - o equipment calibration and maintenance
 - o equipment decontamination
 - o sample containers
 - o sample preservation
 - o sample holding times (must be specified)
 - o sample packaging and shipment
 - o sample documentation (field notebooks, sample labeling, etc.);
 - o chain of custody;
- h. Criteria for data acceptance and rejection; and
- i. Schedule of monitoring frequency.

The Owner/Operator or Respondent shall follow all DTSC and USEPA

guidance for sampling and analysis. DTSC may request that the sampling and analysis section be a separate document.

17. Appendices including:

Design Data - Tabulations of significant data used in the design effort;

Equations - List and describe the source of major equations used in the design process;

Sample Calculations - Present and explain one example calculation for significant calculations; and

Laboratory or Field Test Results.

B. Interim Measures Operation and Maintenance Plan

The Owner/Operator or Respondent shall prepare an Interim Measures Operation and Maintenance (O&M) Plan that includes a strategy and procedures for performing operations, maintenance, and monitoring of the interim measure(s). An Interim Measures Operation and Maintenance Plan shall be submitted to DTSC simultaneously with the Plans and Specifications. The O&M plan shall, at a minimum, include the following elements:

1. Purpose/Approach

Describe the purpose of the document and provide a summary of the project.

2. Project Management

Describe the levels of authority and responsibility (include organization chart), lines of communication and a description of the qualifications of key personnel who will operate and maintain the interim measure(s) (including contractor personnel).

3. System Description

Describe the interim measure and identify significant equipment.

4. Personnel Training

Describe the training process for O&M personnel. The Owner/Operator or Respondent shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, start up and operation of the treatment systems, and training covering appropriate operational procedures once the start-up has been successfully accomplished.

5. Start-Up Procedures

Describe system start-up procedures including any operational testing.

6. Operation and Maintenance Procedures

Describe normal operation and maintenance procedures including:

- a. Description of tasks for operation;
- b. Description of tasks for maintenance;
- c. Description of prescribed treatment or operation condition, and
- d. Schedule showing frequency of each O&M task.

7. Replacement schedule for equipment and installed components.

8. Waste Management Practices

Describe the wastes generated by operation of the interim measure and how they will be managed. Also discuss drainage and indicate how rainwater runoff will be managed.

9. Sampling and Monitoring

Sampling and monitoring activities may be needed for effective operation and maintenance of the interim measure. If sampling activities are necessary, the O&M plan must include a complete sampling and analysis section which specifies at a minimum the following information:

- a. Description and purpose of monitoring tasks;
- b. Data quality objectives;
- c. Analytical test methods and detection limits;
- d. Name of analytical laboratory;
- e. Laboratory quality control (include laboratory QA/QC procedures in appendices)

- f. Sample collection procedures and equipment;
- g. Field quality control procedures:
 - o duplicates (10% of all field samples)
 - o blanks (field, equipment, etc.)
 - o equipment calibration and maintenance
 - o equipment decontamination
 - o sample containers
 - o sample preservation
 - o sample holding times (must be specified)
 - o sample packaging and shipment
 - o sample documentation (field notebooks, sample labeling, etc.);
 - o chain of custody;
- h. Criteria for data acceptance and rejection; and
- i. Schedule of monitoring frequency.

The Owner/Operator or Respondent shall follow all DTSC and USEPA guidance for sampling and analysis. DTSC may request that the sampling and analysis section be a separate document.

10. O&M Contingency Procedures:

- a. Procedures to address system breakdowns and operational problems including a list of redundant and emergency back-up equipment and procedures;
- b. Should the interim measure suffer complete failure, specify alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and/or the environment or exceed cleanup standards; and
- c. The O&M Plan must specify that, in the event of a major breakdown and/or complete failure of the interim measure (includes emergency situations), the Owner/Operator or Respondent will orally notify DTSC within 24 hours of the event and will notify DTSC in writing within 72 hours of the event. The written notification must, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on human health and the environment.

11. Data Management and Documentation Requirements

Describe how analytical 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.

The O&M Plan shall specify that the Owner/Operator or Respondent collect and maintain the following information:

- a. Progress Report Information
 - o Work Accomplishments (e.g., performance levels achieved, hours of treatment operation, treated and/or excavated volumes, concentration of contaminants in treated and/or excavated volumes, nature and volume of wastes generated, etc.).
 - o Record of significant activities (e.g., sampling events, inspections, problems encountered, action taken to rectify problems, etc.).
- b. Monitoring and laboratory data;
- c. Records of operating costs; and
- d. Personnel, maintenance and inspection records.

DTSC may require that the Owner/Operator or Respondent submit additional reports that evaluate the effectiveness of the interim measure in meeting the stabilization goal.

C. Interim Measures Plans and Specifications

[Note - The decision to require the submittal of plans and specifications should be based on the site specific situation. The requirement for plans and specifications should be balanced against the need to quickly implement interim measures at a facility.]

The Owner/Operator or Respondent shall prepare Plans and Specifications for the interim measure that are based on the conceptual design but include additional detail. The Plans and Specifications shall be submitted to DTSC simultaneously with the Operation and Maintenance Plan. The design package must include drawings and specifications needed to construct the interim measure. Depending on the nature of the interim measure, many different types of drawings and specifications may be needed. Some of the elements that may be required are:

- o General Site Plans
- o Process Flow Diagrams
- o Mechanical Drawings
- o Electrical Drawings
- o Structural Drawings
- o Piping and Instrumentation Diagrams
- o Excavation and Earthwork Drawings
- o Equipment Lists
- o Site Preparation and Field Work Standards
- o Preliminary Specifications for Equipment and Material

General correlation between drawings and technical specifications is a basic requirement of any set of working construction plans and specifications. Before submitting the project specifications to DTSC, the Owner/Operator or Respondent shall:

- a. Proofread the specifications for accuracy and consistency with the conceptual design; and
- b. Coordinate and cross-check the specifications and drawings.

ATTACHMENT B

SCOPE OF WORK FOR HEALTH AND SAFETY PLAN

Department of Toxic Substances Control (DTSC) 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 DTSC 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 C

SCOPE OF WORK FOR A RCRA FACILITY INVESTIGATION (RFI)

PURPOSE

The purpose of this RCRA Facility Investigation 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 an RFI are, unless Department of Toxic Substances Control (DTSC) specifies otherwise, a Current Conditions Report, a RCRA Facility Investigation Workplan, a RCRA Facility Investigation Report, and a Health and Safety Plan. 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. The SOW for Public Participation Plan for the entire corrective action process is also included.

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.

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, basements, 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 DTSC or other regulatory 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.

3.8 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, 24-hour, 25-year maximum rainfall, average annual rainfall, prevailing wind direction, etc.

4.5 Surface Water Hydrology

Describe the facility's proximity (distance) to surface water bodies (e.g. coastal waters, lakes, rivers, creeks, drainage basins, floodplains, vernal pools, wetlands, etc.). Describe flows on-site and 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 stratigraphy. 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 and show direction of groundwater flow. Describe the beneficial uses of the ground water (e.g. drinking water supply, agricultural water supply, etc.). 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 and Type (inches)
Filter Pack Material
Filter Pack Thickness
Type of Filter Pack Seal
Thickness of Filter Pack Seal
Pump System (dedicated or non-dedicated)
Type of Pump
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 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 and Stabilization Assessment).

5.1 Previous Investigations

List and briefly describe all previous investigation that have occurred at the facility, agencies (e.g., DTSC'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 (EC), 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 coefficient (log koc) and soil/water partition coefficients. Include a table that summarizes the applicable physical properties for each contaminant.

6.2 Conceptual Model of Contamination 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. 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, 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 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 Ecosystem/Habitats

Discuss the facility's potential impact on sensitive ecosystem.

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 objective 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.

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 RCRA Facility Investigation (RFI) Workplan shall define the procedures necessary to:

1. Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any ground water contamination in and around the facility;
2. Characterize the geology and hydrogeology in and around the facility;
3. Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil contamination in and around the facility;
4. Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any soil gas contamination in and around the facility;
5. 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;
6. Characterize the presence, magnitude, extent (horizontal and vertical), rate of movement and direction of any air releases at the facility;
7. Identify and characterize any potential sources of contamination;
8. Characterize the potential pathways of contaminant migration;
9. Identify any actual or potential receptors;

10. Gather all data to support a risk and/or ecological assessment;
11. 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); and
12. 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 an RFI Workplan is described below:

1. Introduction

Briefly introduce the Workplan. Discuss the Order requiring the RFI and how the 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:

- Organization chart showing key personnel, levels of authority and lines of communication;
- Project Schedule; and
- 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, 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 possible 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 matrices 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 composite set of parameters for each matrix; treat sediments, surface soils and subsurface soils as separate matrices. 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 analysis proposed for the project. Include a table that summarizes the following information for each analysis to be performed:

Analytical Parameters

Analytical Method Reference Number (from EPA SW 846)

Sample Preparation and/or Extraction Method Reference Number (from SW 846)

Detection and Practical Quantitation Limits

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 (MCLs). If this were the case, it would be important to ensure that any ground water test methods had detection limits below the MCLs. Give an explanation if all samples from the same matrix 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 define 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 layout planned for the grid.

Outline sequentially or step-by-step the procedure for collecting a sample for each matrix 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.

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 RFI 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
Matrix
Preservation Method
Holding Times
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
Matrix
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. 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 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 and time 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 days sampling:

- Date
- Starting Time
- Meteorological Conditions
- Field Personnel Present
- Level of Personnel 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
- Problems encountered and actions taken to resolve problems
- Photo Log
- Deviations from Work Plan

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.

5.4.5 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 piezometer) 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:

Analysis Group (e.g., volatile organic compounds)

Matrix

Practical Quantitation Limits (PQL)

Spike Recovery Control Limits (%R)

Duplicate Control Limits +/- (RPD)

QA Sample Frequency

Data Validation

A reference may note the specific pages from EPA'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 matrices must be collected at a frequency of at least one (1) sample per week or ten (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 to be 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.

Equipment and field bottle blank samples may be required. 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 or a sample collection vessel 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 (1) field sample per week or one (1) per 20 samples (including field blanks and duplicates), whichever is greater, must be designated as the "Lab QC Sample" for the matrix 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 matrices, 2-3 times the normal sample volume must be collected for the laboratory QC sample.

6.3 Performance System Audits by 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) 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 Work Plan.

C. RCRA Facility Investigation Report

An 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, a Phase 2 RFI Workplan and/or Interim Corrective Measures Workplan must be submitted along with the RFI Report.

At a minimum, the RFI Report must include:

- A summary of investigation results (include tables that summarize analytical results).
- A complete description of the investigation, including all data necessary to understand the project in its entirety including all investigative methods and procedures.
- A discussion of key decision points encountered and resolved during the course of the investigation.
- 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.
- Tables that list all chemistry data for each matrix investigated.
- An analysis of current and existing ground water data to illustrate temporal changes for both water chemistry and piezometric data (use graphics whenever possible).
- A description of potential or known impacts on human and environmental receptors from releases at the facility.
- 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 Forms (see Appendix A of Attachment 3) must be completed by the analytical laboratory and submitted as part of the RFI Report.
- Assessment of the entire QA/QC program effectiveness.

In addition to the RFI Report, the DTSC may require the Respondent to submit the analytical results (database) on a floppy disk (DTSC 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 DTSC upon request.

- Data validation results should be documented in the RFI Report.

D. Health and Safety Plan

1. Objectives

Describe the goals and objectives of the RFI 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.

2. Hazard Assessment

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

Discuss the following:

- Inhalation Hazards
- Dermal Exposure
- Ingestion Hazards
- Physical Hazards
- 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 investigation 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.).

SCOPE OF WORK FOR PROGRESS REPORTS

Progress reports shall, at a minimum, include:

1. All actions taken during the reporting period to achieve compliance with the Order;
2. A summary of any findings made during the reporting period;
3. All problems or potential problems encountered during the reporting period (also discuss problem solutions);
4. All projected work for the next reporting period as well as anticipated problems and avoidance measures;
5. A discussion of any changes in personnel that occurred during the reporting period;
6. Summaries of all contacts with representatives of the press, local community or public interest groups;
7. Summary of treatment system effectiveness. Provide a comparison of treatment system operation to predicted performance levels (applicable only if there is an operating treatment system);
8. The results of any sampling tests and/or other data generated during the reporting period; and
9. A discussion of any deviation from the Work Plan and reasons for the deviation.

SCOPE OF WORK FOR A PUBLIC PARTICIPATION PLAN

The Public Participation Plan (PPP) must address the public involvement needs for all aspects of corrective action including Interim Measures (IM), RCRA Facility Investigation (RFI), Corrective Measures Study (CMS) and Corrective Measures Implementation (CMI). the additional information, see DTSC's Public Participation Manual and RCRA Public Involvement Manual. The PPP shall include the following elements:

1. Introduction

Describe the public involvement goals and objectives for corrective action (e.g., provide for citizen input and involvement, provide the community with information updates and respond to inquiries). Specify the minimum requirements mandated by law, regulation and policy.

The amount of public involvement work must be consistent with the nature and degree of community concerns and with any state or federal requirements. The public involvement program should be flexible and able to respond to changing public concerns as the corrective action process proceeds from the RFI to the CMS and into Corrective Measure Implementation (CMI).

2. Public Participation Background

Identify and describe any known issues or community concerns related to the facility (historically and currently) and environmental issues in general (i.e., awareness of other sites and facilities nearby, involvement in agency decision making related to these other sites). Indicate if any community or local officials have been interviewed. Acquire and describe demographic information about the potentially impacted community, to include non-English-speaking populations.

3. Techniques to Reach Public Participation Goals

Many public participation techniques may be used to accomplish the objectives. These techniques include: fact sheets, information community workgroup meetings, community advisory committees, community meetings, information repositories, mailing lists and public service announcements. Include a detailed description of how the local community will be contacted and informed. At a minimum, the following items must be developed as described below:

3.1 Mailing List

Establish and maintain a mailing list of: all local officials; interested, affected and potentially affective private citizens; residents within a one-half mile radius of the facility; contiguous property owners and occupants, (expanded to include owners and occupants of property on off-site plume, if applicable; and news media representatives who should receive fact sheets or other information regarding the investigation/ migration activities at the facility. The mailing list shall also include DTSC "Mandatory Mailing List". The mailing list must be expanded as time goes on to include all interested persons. The mailing list should be submitted to the Department separately from the PPP.

3.2 Information Repository

Establish and maintain at least one information repository at a location convenient to public access (e.g., local library). The purpose of the information repository is to allow open and convenient public access to site-related documents approved by the Department for public disclosure. Therefore all documents for the information repository must be approved by the Department. At a minimum, the repository for a site must include copies of the following:

- Order of Consent Order
- Regional Water Quality Control Board Orders
- RFI Workplans
- RFI Reports
- Interim Measure Workplans
- Corrective Measures Study Workplans
- Corrective Measures Study Reports
- Public Involvement Plan
- Statement of Basis for Remedy Selection

Other information:

- Copy of relevant laws, regulations and policies;
- Copies of press releases and newspaper clippings that refer to the site;
- Brochures, fact sheets, and other information about relevant laws, regulations, policies and the specific site;

- Any other relevant material (e.g., published studies on the potential risks associated with specific chemicals that have been found at the site)

3.3 Fact Sheet

The Respondent shall prepare fact sheets to inform the community key event in the corrective action process (e.g., interim measures, RFI, RFI findings, etc.), as indicated in the PPP or directed by DTSC in response to changing site conditions.

It is important that all fact sheets be written clearly so that the public will understand the information. In general, facility fact sheets should include: a description of the overall investigation/remedial process from start to finish; a summary of existing contamination at the facility; a summary of possible impacts on the local community (e.g., drinking water supplies, etc.); a summary of any interim measures being taken or planned at the facility; a synopsis of upcoming activities; and a description of public participation opportunities to include a brief description about the potential uses of available documents in and the location of the information repository. all fact sheets must be approved by DTSC before distribution.

4. Submittal Schedule

The submittal schedule must tie technical milestones (when key documents are to be submitted to DTSC) to public involvement activities.

ATTACHMENT D
COMMUNITY PROFILE OUTLINE

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 consideration, 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 _____

ATTACHMENT E

SCOPE OF WORK FOR A CORRECTIVE MEASURES STUDY

PURPOSE

The purpose of the corrective Measures Study (CMS) is to:

1. Develop and evaluate corrective measure alternatives that may be taken at the Facility to address releases of hazardous wastes (including hazardous constituents); and
2. Recommend the corrective measures to be taken at the Facility that are protective of human health and the environment.

SCOPE

A Corrective Measures Study Workplan and Corrective Measures Study Report are required of the CMS. The Scope of Work (SOW) for the Corrective Measures Study Workplan and Report describe what should be included in each document.

The SOWs are intended to be flexible documents capable of addressing both simple and complex site situations. The scope and substance of the CMS should be focused to fit the complexity of the site-specific situation. It is anticipated that Respondent's sites with complex environmental problems may need to evaluate a number of technologies and corrective measure alternatives. For other facilities, however, it may be appropriate to evaluate a single corrective measure alternative.

The Department may require Respondent to conduct additional studies beyond what is discussed in the SOWs in order to support the CMS. The Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks. The SOW for the Corrective Measures Study Workplan and Report are specified below:

A. Corrective Measures Study Workplan

The Corrective Measures Study (CMS) Workplan shall, at a minimum, include the following elements:

1. A brief project summary.
2. A description of the overall purpose of the CMS;
3. Corrective measure objectives including proposed media cleanup standards and points of compliance. Include the justification and supporting rationale for the proposed media cleanup standards and points of compliance. The proposed media cleanup standards must be based on available promulgated federal and state cleanup standards, risk based analysis, data and information gathered during the corrective action process (e.g., from Facility Investigation, etc.), and/or information from other applicable guidance documents. The Department may require that the Owner/Operator or Respondent conduct a risk assessment to gather information for establishing cleanup standards. Based on the CMS Report and other information including public comments, the Department will establish final cleanup standards and points of compliance as part of the remedy selection process;
4. A description of the specific corrective measure technologies and/or corrective measure alternatives which will be studied;
5. A description of the general approach to investigating and evaluating potential corrective measures;
6. A summary description of any proposed treatability, pilot, laboratory and/or bench scale studies. Proposed studies must be further detailed in either the CMS Workplan or in separate workplan. Submittal times for separate workplans must be included in the CMS Workplan project schedule;
7. A proposed outline for the CMS Report including a description of how information will be presented;
8. A description of overall project management including overall approach, levels of authority (include organization chart), lines of communication, budget and personnel. Include a description of qualifications for personnel directing or performing the work; and
9. A project schedule that specifies all significant steps in the process and when key documents (e.g., CMS Report) are to be submitted to DTSC.

B. Corrective Measures Study Report

The Corrective Measures Study (CMS) Report shall, at a minimum, include the following elements:

1. Introduction

Describe the purpose and intent of the document.

2. Description of Current Conditions

The Respondent shall include a brief discussion of any new information that has been developed since the RCRA Facility Investigation Report was finalized. This discussion should concentrate on those issues which could significantly affect the evaluation and selection of the corrective measure alternative(s).

3. Corrective Action Objectives

The Respondent shall propose corrective action objectives including applicable media cleanup standards. The Respondents shall propose and justify media cleanup standards and points of compliance.

4. Identification and Screening of Corrective Measure Technologies

a. Identification

List and briefly describe potentially applicable technologies for each affected media that may be used to achieve the corrective action objectives. Include a table that summarizes the available technologies.

The Respondent should consider innovative treatment technologies. Innovative technologies are defined as those technologies for source control other than incineration, solidification/stabilization and pumping with conventional treatment for contaminated groundwater. Innovative treatment technologies may require extra initial effort to gather information, analyze options and to adapt the technology to site specific situations. However, in the long run, innovative treatment technologies could be more cost effective. Treatability studies and on-site pilot scale studies may be necessary for evaluating innovative treatment technologies.

b. Screening

Technologies must be screened to eliminate those that may prove unfeasible to implement given the existing set of waste and site-specific conditions. The screening is accomplished by evaluating technology limitations and using contaminant and site characterization information from the RCRA Facility Investigation to screen out technologies that cannot be fully implemented at the facility. The screening process must focus on eliminating those technologies which have several limitations for a given set of waste and site-specific conditions.

As with all decisions during the CMS, the screening of technologies must be fully documented. This is especially true if the screening step indicates that only one corrective action technology should proceed to the next step and be evaluated in detail. List the corrective action technologies selected for further evaluation. Also document the reasons for excluding any corrective action technologies. Include a table that summarizes the findings.

5. Corrective Measure Alternative Development

Assemble the technologies that pass the screening step into specific alternatives that have potential to meet the corrective action objectives. List and briefly describe each corrective measure alternative.

Each alternative may consist of an individual technology or a combination of technologies used in sequence (e.g., treatment train). Depending on the site specific situation, different alternatives may be considered for separate areas of the facility. List and briefly describe each corrective measure alternative.

6. Evaluation of Corrective Measure Alternatives

The four corrective action standards and five remedy selection decision factors described below shall be used to evaluate the corrective measure alternatives. All alternatives must meet the corrective action standards before the remedy selection decision factors are used for further evaluation.

The corrective action standards are as follows:

- o Be protective of human health and the environment;
- o Attain media cleanup standards;
- o Control the source(s) of releases in order to reduce or eliminate, to the extent practicable, further releases of hazardous wastes (including hazardous constituents) that may pose a threat to human health and the environment; and
- o Comply with any applicable federal, state, and local standards for management of wastes.

The remedy selection decision factors are as follows:

- o Short- and Long-Term Effectiveness;
- o Reduction of Toxicity, Mobility and/or Volume;
- o Long-Term Reliability;
- o Implementability; and
- o Cost.

The corrective action standards and remedy selection decision factors are described in further detail below.

a. Be Protective of Human Health and the Environment

Describe in detail how each corrective measure alternative is protective of human health and the environment.

This standard for protection of human health and the environment is a general mandate of the California hazardous waste statute. The standard requires that remedies include any measures that are needed to be protective. These measures may or may not be directly related to media cleanup, source control, or management of wastes. An example would be a requirement to provide alternative drinking water supplies in order to prevent exposures to a contaminated drinking water supply.

b. Attain Media Cleanup Standards

Describe in detail each corrective measure alternatives ability to meet the proposed media cleanup standards.

c. Control the Sources of Releases

Describe in detail each corrective measure alternatives ability to control the sources of releases.

A critical objective of any remedy must be to stop further environmental degradation by controlling or eliminating further releases that may pose a threat to human health and the environment. Unless source control measures are taken, efforts to cleanup releases may be ineffective or, at best, will essentially involve a perpetual cleanup. Therefore, an effective source control program is essential to ensure the long-term effectiveness and protectiveness of the corrective action effort.

The source control standard is not intended to mandate a specific remedy or class of remedies. Instead, the Owner/Operator or Respondent is encouraged to examine a wide range of options. This standard should not be interpreted to preclude the equal consideration of using other protective remedies to control the source, such as partial waste removal, capping, slurry walls, in-situ treatment/stabilization and consolidation.

d. Comply With Any Applicable Standards for Management of Wastes

Discuss how any specific waste management activities will be conducted in compliance with all applicable state or federal regulations (e.g., CAMU closure requirements, land disposal restrictions).

e. Short- and Long-Term Effectiveness

Each corrective measure alternative must be evaluated as to its effectiveness in protecting human health and the environment and meeting the corrective action objectives. Both short- and long-term components of effectiveness must be evaluated; short-term referring to the construction and implementation period, and long-term referring to the period after the remedial action is complete. Estimate

approximately how much time it will take to implement each corrective measure alternative, how much time to see initial beneficial results, and how much time to achieve the corrective action objectives.

The evaluation of short-term effectiveness must include possible threats to the safety of nearby communities, workers, and environmentally sensitive areas (e.g., oceans, wetlands) during construction of the corrective measure alternative. Factors to consider are fire, explosion, exposure to hazardous substances and potential threats associated with treatment, excavation, transportation and re-disposal or containment of waste material. Laboratory and/or field studies are extremely useful in estimating the effectiveness of corrective measures and should be used whenever possible.

The evaluation of long-term effectiveness must include possible threats to the safety of nearby communities workers, and environmentally sensitive areas (e.g., oceans, wetlands) during operation of the corrective measure alternative.

f. Reduction of Toxicity, Mobility and/or Volume

Each corrective measure alternative must be evaluated for its ability to reduce the toxicity, mobility, and/or volume of the contaminated media. Reduction in toxicity, mobility, and/or volume refers to changes in one or more characteristics of the contaminated media by the use of corrective measures that decrease the inherent threats associated with the media.

Estimate how much the corrective measure alternative will reduce the waste toxicity, volume and/or mobility (compare initial site conditions to post-corrective measure conditions). In general, the Department strongly prefers corrective measures that have a high degree of permanence and reduce the contaminant toxicity, mobility and volume through treatment.

g. Long-Term Reliability

Each corrective measure alternative must be evaluated with regards to its long-term reliability. This evaluation includes consideration of operation and maintenance requirements.

Demonstrated and expected reliability is a way of assessing the risk and

effect of failure. Discuss whether the technology or combination of technologies have been used effectively together under analogous site conditions, whether failure of any one technology in the alternative has an impact on receptors or contaminant migration, and whether the alternative would have the flexibility to deal with uncontrollable changes at the site (e.g., heavy rain storms, earthquakes, etc).

Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements must also be considered.

Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure alternative shall be evaluated in terms of the projected useful life of the overall alternative and of its component technologies. Useful life is defined as the length of time the necessary or required level of effectiveness can be maintained.

h. Implementability of Corrective Measure Alternatives

The implementability criterion addresses the technical and administrative feasibility of implementing a corrective measure alternative and the availability of various services and materials needed during implementation. Each corrective measure alternative must be evaluated using the following criteria:

Construction and Operation: Corrective measure alternatives must be feasible to implement given the existing set of waste and site-specific conditions. This evaluation was initially done for specific technologies during the screening process and is addressed again in this detailed analysis of the alternative as a whole. It is not intended that the screening process be repeated here, but instead to highlight key differences and/or changes from the screening analysis that may result from combining technologies.

Administrative Feasibility: Discuss the administrative activities needed to implement the corrective measure alternative (e.g., permits, public

acceptance, rights of way, off-site approvals, etc.).

Availability of Services and Materials: Discuss the availability of adequate off-site treatment, storage capacity, disposal services, needed technical services and materials, and the availability of prospective technologies for each corrective measure alternative.

I. Cost

Develop a preliminary cost estimate for each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs. Include a description of how the costs were estimated and what assumptions were used.

- o The preliminary capital cost estimate must consider all key costs including, at a minimum, costs for engineering, mobilization, demobilization, site preparation, construction, materials, labor, equipment purchase and rental, sampling, analysis, waste disposal, permitting and health and safety measures.
- o The preliminary operation and maintenance cost estimate must consider all key costs including, at a minimum, costs for labor, training, sampling, analysis, maintenance materials, utilities, waste disposal, waste treatment, permitting and health and safety measures.
- o Calculate the net present value of preliminary capital and operation and maintenance costs for each corrective measure alternative.

7. **Owner/Operator or Respondent's Recommended Corrective Measure Alternative**

The Owner/Operator or Respondent may recommend a preferred corrective measure alternative for consideration by the Department. Such a recommendation should include a description and supporting rationale for the preferred alternative that is consistent with the corrective action standards and remedy selection decision factors discussed above.

Based on the CMS Report and other information including public comments, the Department will establish final cleanup standards, points of compliance

and will select a final remedy for the facility.

ATTACHMENT F

SCOPE OF WORK FOR CORRECTIVE MEASURES IMPLEMENTATION

PURPOSE

The purpose of the Corrective Measures Implementation (CMI) program is to design, construct, operate, maintain and monitor the performance of the corrective measure or measures selected by DTSC. Corrective measures are intended to protect human health and/or the environment from hazardous waste releases from the Facility. The Respondent will furnish all personnel, materials and services necessary to implement the corrective measures program.

SCOPE

The documents required for Corrective Measures Implementation are a Conceptual Design, Final Plans and Specification, Operation and Maintenance Plan, Construction Workplan, Construction Completion Report, Health and Safety Plan, Corrective Measure Completion Report and Progress Reports. The scope of work (SOW) for each document is specified below.

DTSC may require the Respondent to conduct additional studies beyond what is discussed in the SOWs in order to support the CMI program. The Respondent will furnish all personnel, materials and services necessary to conduct the additional tasks.

A. Conceptual Design

The Respondent shall prepare a Conceptual Design (CD) that clearly describes the size, shape, form, and content of the proposed corrective measure, the key components or elements that are needed, describes the designers vision of the corrective measure in the form of conceptual drawings and schematics, and includes procedures and schedules for implementing the corrective measure(s).

The CD must, at a minimum, include the following elements:

1. Introduction/Purpose

Describe the purpose of the document and provide a summary description of the project.

2. Corrective Measures Objectives

Discuss the corrective measure objectives including applicable media cleanup standards.

3. Conceptual Model of Contaminant Migration

It is important to know where the contaminants are and to understand how they are moving before an adequate corrective measure can be developed. To address this critical question, the Respondent must present a conceptual model of the site and 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 (e.g., water solubility, density, Henry's Law Constant, etc.) for each contaminant and assessing how the contaminant may migrate given the existing site conditions (geologic features, depth to groundwater, etc.). Describe the phase (water, soil, gas, non-aqueous) and location where contaminants are likely to be found. This analysis may have already been done as part of earlier work (e.g., Current Conditions Report). If this is the case, then provide a summary of the conceptual model with a reference to the earlier document. If not, then field validation of the conceptual model is required.

4. Description of Corrective Measures

Considering the conceptual model of contaminant migration, qualitatively describe what the corrective measure is supposed to do and how it will function at the Facility. Discuss the constructability of the corrective measure and its ability to meet the corrective measure objectives.

5. Data Sufficiency

Review existing data needed to support the design effort and establish whether or not there is sufficient accurate data available for this purpose. the Respondent must summarize the assessment findings and specify any additional data needed to complete the corrective measure design. Sampling and analysis plans and/or treatability study workplans may have to be developed to obtain additional data. Submittal times for any new sampling and analysis plans and/or treatability study workplans must be included in the project schedule.

6. Project Management

Describe the management approach including levels of authority and responsibility (include organization chart), lines of communication and the qualifications of key personnel who will direct the corrective measure design and implementation effort (including contractor personnel).

7. Project Schedule

The project schedule must specify all significant steps in the process and when all CMI deliverables (e.g., Operation and Maintenance Plan, Corrective Measure Construction Workplan, etc.) are to be submitted to the Department.

8. Design Criteria

Specify performance requirements for the overall corrective measure and for each major component. The Respondent must select equipment that meets the performance requirements.

9. Design Basis

Discuss the process and methods for designing all major components of the corrective measure. Discuss the significant assumptions made and possible sources of error. Provide justification for the assumptions.

10. Conceptual Process/Schematic Diagrams

11. Site plan showing preliminary plant layout and/or treatment area.

12. Tables listing number and type of major components with approximate dimensions.

13. Tables giving preliminary mass balances.

14. Site safety and security provision (e.g., fences, fire control, etc.).

15. Waste Management Practices

Describe the wastes generated by the construction of the corrective measure and how they will be managed. Also discuss drainage and indicate how

rainwater runoff will be managed.

16. Required Permits

List and describe the permits needed to construct and operate the corrective measure. Indicate on the project schedule when the permit applications will be submitted to the applicable agencies and an estimate of the permit issuance date.

17. Long-Lead Procurement Considerations

The Respondent shall prepare a list of any elements or components of the corrective measure that will require custom fabrication or for some other reason must be considered as long-lead procurement items. The list must include the reason why the items are considered long-lead items, the length of time necessary for procurement, and recognized sources of such procurement;

18. Appendices including:

Design Data - Tabulations of significant data used in the design effort;

Equations - List and describe the source of major equations used in the design process;

Sample Calculations - Present and explain one example calculation for significant or unique design calculations; and Laboratory or Field Test Results.

Laboratory or Field Test Results.

B. Final Plans and Specifications

Final Plans and Specifications shall be submitted to DTSC simultaneously with the final Operation and Maintenance Plan, Construction Workplan, and a detailed cost estimate of the project. The final design package must consist of the detailed drawings and specification needed to construct the corrective measure. Depending on the nature of the corrective measure, many different types of drawings and specifications may be needed. Some of the elements that may be required are:

General Site Plans
Process Flow Diagrams
Mechanical Drawings
Electrical Drawings
Piping and Instrumentation Diagrams
Structural Drawings
Excavation and Earthwork Drawings
Site Preparation and Field Work Standards
Construction Drawings
Installation Drawings
Equipment Lists
Detailed Specifications for Equipment Material

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

- a. Proofread the specifications for accuracy and consistency with the preliminary
- b. Coordinate and cross-check the specification and drawings.

All designs must be certified by an independent registered professional engineer.

C. Operation and Maintenance Plan

The Respondent shall prepare an Operation and Maintenance (O&M) Plan that includes a strategy and procedures for performing operations, long term maintenance, and monitoring of the corrective measure. A final Operation and Maintenance Plan shall be submitted to the Department simultaneously with the final Plans and Specifications. The O&M plan shall, at a minimum, include the following elements:

1. Introduction/Purpose

Describe the purpose of the document and provide a summary description of the project.

2. Project Management

Describe the management approach including levels of authority and responsibility (include organization chart), lines of communication and the qualifications of key personnel who will operate and maintain the corrective measures (including contractor personnel).

3. System Description

Describe the corrective measure and identify significant equipment.

4. Personnel Training

Describe the training process for O&M personnel. The Respondent shall prepare, and include in the technical specifications governing treatment systems, contractor requirements for providing: appropriate service visits by experienced personnel to supervise the installation, adjustment, start up and operation of the treatment systems, and training covering appropriate operational procedures once the start-up has been successfully accomplished.

5. Start-Up Procedures

Describe system start-up procedures including any operational testing.

6. Operation and Maintenance Procedures

Describe normal operational and maintenance procedures including:

- a. Description of tasks for operation;
- b. Description of tasks for maintenance;
- c. Description of prescribed treatment or operation conditions; and
- d. Schedule showing frequency of each O&M task.

7. Replacement schedule for equipment and installed components.

8. Waste Management Practices

Describe the wastes generated by operation of the corrective measure and how they will be managed. Also, discuss drainage and indicate how rainwater runoff will be managed.

9. Sampling and monitoring activities may be needed for effective operation and maintenance of the corrective measure. If sampling activities are necessary, the O&M plan must include a complete sampling and analysis section which specifies the following information:

- a. Description and purpose of monitoring tasks;
- b. Data quality objectives;
- c. Analytical test methods and detection limits;
- d. Name of analytical laboratory;
- e. Laboratory quality control (include laboratory QA/QC procedures in appendices);
- f. Sample collection procedures and equipment;
- g. Field quality control procedures:
 - duplicates (10% of all field samples)
 - blanks (field, equipment, etc.)
 - equipment calibration and maintenance
 - sample containers
 - sample preservation
 - sample holding times (must be specified)
 - sample packaging and shipment
 - sample documentation (field notebooks, sample labeling, etc.)
 - chain of custody
- h. Criteria for data acceptance and rejection; and
- i. Schedule of monitoring frequency.
The Respondent shall follow all DTSC and USEPA guidance for sampling and analysis.

10. Corrective Measures Completion Criteria

Describe the process and criteria (e.g., groundwater cleanup goal met at all compliance points for 1 year) for determining when corrective measures may cease. Also describe the process and criteria for determining when maintenance and monitoring may cease. Criteria for corrective measures such as landfill cap must be carefully crafted to account for the fact that a landfill cap will never actually "cease" but will need to be maintained and monitored for a long period of time. Satisfaction of the completion criteria will trigger preparation and submittal of the Corrective Measures Completion Report.

11. O&M Contingency Procedures:

- a. Procedures to address system breakdowns and operational problems including a list of redundant and emergency back-up equipment and procedures;
 - b. Should the corrective measure suffer complete failure, specify alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and/or the environment or exceed cleanup standards;
 - c. The O&M Plan must specify that, in the event of a major breakdown and/or complete failure of the corrective measure (includes emergency situations), the Respondent will orally notify the Implementing Agency within 24 hours of the event and will notify the Department in writing within 72 hours of the event. The written notification must, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on human health and/or the environment; and
 - d. Procedures to be implemented in the event that the corrective measure is experiencing major operational problems, is not performing to design specifications and/or will not achieve the cleanup goals in the expected time frame. For example, in certain circumstances both a primary and secondary corrective measure may be selected for the Facility. If the primary corrective measure were to fail, then the secondary would be implemented. This section would thus specify that if the primary corrective measure failed, then design plans would be developed for the secondary measure.
12. **Data Management and Documentation Requirements**
Describe how analytical 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.

The O&M Plan shall specify that the Respondent collect and maintain the following information:

- a. Progress Report Information

- Work Accomplishments (e.g., performance levels achieved, hours of treatment operation, treated and/or excavated volumes, concentration of volume of wastes generated, etc.).
 - Record of significant activities (e.g., sampling events, inspections, problems encountered, action taken to rectify problems, etc.).
- b. Monitoring and laboratory data
 - c. Personnel, maintenance and inspection records.

This data and information should be used to prepare Progress Reports and the Corrective Measure Completion Report.

D. Construction Workplan

The Respondent shall prepare a Construction Workplan which documents the overall management strategy, construction quality assurance procedures and schedule for constructing the corrective measure. A draft Construction Workplan shall be submitted to the Department simultaneously with the draft Plans and Specifications and draft Operation and Maintenance Plan. A final Construction Workplan shall be submitted to the Department simultaneously with the final Plans and Specifications and final Operation and Maintenance Plan. Upon receipt of written approval from the Department, the Respondent shall commence the construction and provisions contained therein. The Construction Workplan must be approved by the Department prior to the start of corrective measure construction. The Construction Workplan must, at a minimum, include the following elements:

1. Introduction/Purpose

Describe the purpose of the document and provide a summary description of the project.

2. Project Management

Describe the construction management approach including levels of authority and responsibility (include organization chart), lines of communication and the qualifications of key personnel who will direct the corrective measure construction effort and provide construction quality assurance/quality control (including contract personnel);

3. Project Schedule

The project schedule must include timing of key elements of the bidding process, timing for initiation and completion of all major corrective measure construction tasks as specified in the Final Plans and Specifications, and specify when the Construction Completion Report is to be submitted to DTSC.

4. Construction Quality Assurance/Quality Control Program

The purpose of construction quality assurance is to ensure, with a reasonable degree of certainty, that a completed corrective measure will meet or exceed all design criteria, plans and specifications. The Construction Workplan must include a complete construction quality program to be implemented by the Respondent.

5. Waste Management Procedures

Describe the wastes generated by construction of the corrective measure and how they will be managed.

6. Sampling and Analysis

Sampling and monitoring activities may be needed for construction quality assurance/quality control and/or other construction related purposes. If sampling activities are necessary, the Construction Workplan must include a complete sampling and analysis section which specifies the following information:

- a. Description and purpose of monitoring tasks;
- b. Data quality objectives;
- c. Analytical test methods and detection limits;
- d. Name of analytical laboratory;
- e. Laboratory quality control (include laboratory QA/QC procedures in appendices);
- f. Sample collection procedures and equipment;
- g. Field quality control procedures:
 - duplicates (10% of all field samples)
 - blanks (field, equipment, etc.)
 - equipment calibration and maintenance

- equipment decontamination
 - sample containers
 - sample preservation
 - sample holding times (must be specified)
 - sample packaging and shipment
 - sample documentation (field notebooks, sample labeling, etc.)
 - chain of custody;
- h. Criteria for data acceptance and rejection; and
- i. Schedule of monitoring frequency.

The Respondent shall follow all DTSC and USEPA guidance for sampling and analysis.

7. Construction Contingency Procedures

- a. Changes to the design and/or specifications may be needed during construction to address unforeseen problems encountered in the field. Procedures to address such circumstances, including notification of DTSC, must be included in the Construction Workplan;
- b. The Construction Workplan must specify that, in the event of a construction emergency (e.g., fire, earthwork failure, etc.), the Respondent will orally notify DTSC within 24 hours of the event and will notify DTSC in writing within 72 hours of the event. The written notification must, at a minimum, specify what happened, what response action is being taken and/or is planned, and any potential impacts on public health and/or the environment; and
- c. Procedures to be implemented if unforeseen events prevent corrective measure construction. For example, in certain circumstances both a primary and secondary corrective measure may be selected for the Facility. If the primary corrective measure could not be constructed, then the secondary would be implemented. This section would thus specify that if the primary corrective measure could not be constructed, then design plans would be developed for the secondary measure.

8. Construction safety procedures should be specified in a separate Health and Safety Plan

9. Data Management Documentation Requirements

Describe how analytical 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.

The Construction Workplan shall specify that the Respondent collect and maintain the following information:

- a. Progress Report Information
 - Work Accomplishments (e.g., hours of operation, excavated volumes, nature and volume of wastes generated, area of cap completed, length of trench completed, etc.).
 - Record of significant activities (e.g., sampling events, inspections, problems encountered, action taken to rectify problems, etc.).
- b. Monitoring and laboratory data;
- c. Records of construction costs; and
- d. Personnel, maintenance and inspection records.

This data and information should be used to prepare progress reports and the Construction Completion Report.

10. Cost Estimate/Financial Assurance

If financial assurance for corrective measure construction and operation is required by an enforcement order, facility permit, or through use of Department discretion, the Construction Workplan must include a cost estimate, specify which financial mechanism will be used and when the mechanism will be established. The cost estimate shall include both construction and operation and maintenance costs. An initial cost estimate shall be included in the draft Construction Workplan and a final cost estimate shall be included in the final Construction Workplan. The financial assurance mechanism may include a performance or surety bond, a trust fund, a letter of credit, financial test and corporate guarantee equivalent to that in the

California Code of Regulations, Title 22, Section 66264.143, 66265.143 or any other mechanism acceptable to the Department.

Financial assurance mechanisms are used to assure the Department that the Owner/Operator or Respondent has adequate financial resources to construct and operate the corrective measure.

E. Health and Safety Plan

The Respondent must prepare a Health and Safety (H&S) Plan for construction, operation and maintenance of the corrective measure. The H&S Plan must, at a minimum, include the following elements:

1. Objectives

Describe the goals and objective of the health and safety program (must apply to on-site personnel and visitors). The health and safety plan must be consistent with the Facility Contingency Plan, Occupational Safety and Health Administration (OSHA) Regulations, NIOSH Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities (1985), all state and local regulations.

2. Hazard Assessment

List and describe the potentially hazardous substances that could be encountered by field personnel during construction and/or operation and maintenance activities. Discuss the following:

- Inhalation Hazards
- Dermal Exposure
- Ingestion Hazards
- Physical Hazards
- 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

- a. For each operational task, describe personal protection levels and identify all monitoring equipment.
 - b. Describe any action levels and corresponding response actions (i.e., when will levels of safety be upgraded).
 - c. 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.).

F. Construction Completion Report

The Respondent shall prepare a Construction Completion (CC) Report which documents how the completed project is consistent with the Final Plans and Specifications. A CC Report shall be submitted to the Department when the construction and any operational tests have been completed. The CC Report shall, at a minimum, include the following elements:

1. Purpose
2. Synopsis of the corrective measure, design criteria, and certification that the corrective measure was constructed in accordance with the Final Plans and Specifications;
3. Explanation and description of any modifications to the Final Plans and Specifications and why these were necessary for the project;
4. Results of any operational testing and/or monitoring, indicating how initial operation of the corrective measure compares to the design criteria.

5. Summary of significant activities that occurred during construction. Include a discussion of problems encountered and how they were addressed.
6. Summary of any inspection findings (include copies of key inspection documents in appendices).
7. As built drawings; and
8. A schedule indicating when any treatment systems will begin full scale operations.

G. Corrective Measure Completion Report

The Respondent shall prepare a Corrective Measure Completion (CMC) Report when the Respondent believes that the corrective measure completion criteria have been satisfied. The purpose of the CMC Report is to fully document how the corrective measure completion criteria have been satisfied and to justify why the corrective measures and/or monitoring may cease. The CMC Report shall, at a minimum, include the following elements:

1. Purpose
2. Synopsis of the corrective measure
3. Corrective Measure Completion Criteria

Describe the process and criteria for determining when corrective measures, maintenance and monitoring may cease. Corrective measure completion criteria were given in the final Operation and Maintenance (O&M) Plan.
4. Demonstration that the completion criteria have been met. Include results of testing and/or monitoring, indicating how operation of the corrective measure compares to the completion criteria.
5. Summary of work accomplishments (e.g., performance levels achieved, total hours of treatment operation, total treated and/or excavated volumes, nature and volume of wastes generated, etc.).
6. Summary of significant activities that occurred during operations. Include a

discussion of problems encountered and how they were addressed.

7. Summary of inspection findings (include copies of key inspection documents in appendices); and

8. Summary of total operation and maintenance costs.

H. Submittal Summary

The following list provides a summary of when and how key documents should be submitted to the Department. The Department may adjust this list to meet site-specific circumstances.

1. The submittal schedule for the documents listed below should be included in an enforcement order, permit or otherwise specified by the Department.
 - o Conceptual Design (CD)
2. The submittal schedule for the documents listed below must be specified in the CD. The groupings reflect which documents should be submitted together.
 - o Draft Plans and Specifications
 - o Draft Operation and Maintenance Plan
 - o Draft Construction Workplan
 - o Final Plans and Specifications
 - o Final Operation and Maintenance Plan
 - o Final Construction Workplan
3. The submittal schedule for the document listed below must be specified in the Final Construction Workplan.
 - o Construction Completion Report
4. The submittal schedule for the document listed below is based on when the Respondent believes the completion criteria have been satisfied.
 - o Corrective Measure Completion Report
5. The submittal schedule for Progress Reports and a Health and Safety Plan shall be specified in the order or permit.

ATTACHMENT G

I. Interim Measures (IM)

Project Manager reviews IM Workplan (with Public Involvement Plan), issues NOD, reviews/approves revised IM Workplan, reviews Operation and Maintenance Plan (O&MP), and IM Plans and Specifications (P&S), issues NOD on IM O&MP and IM P&S.

COST ESTIMATE FOR REVIEW AND APPROVAL OF IM WORK PLAN			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	160	\$116.00	\$18,560.00
Supervisor - SHSEG I	25	\$134.00	\$3,350.00
Geologist - HSEG	60	\$116.00	\$6,960.00
Supervising Geologist- SHSEG I	8	\$134.00	\$1,072.00
Industrial Hygienist	24	\$115.00	\$2,760.00
Senior Industrial Hygienist	3	\$131.00	\$393.00
Staff Toxicologist	30	\$149.00	\$4,470.00
Senior Toxicologist	3	\$156.00	\$468.00
Staff Counsel	8	\$152.00	\$1,216.00
Senior Counsel	4	\$175.00	\$700.00
Public Participation Specialist	20	\$103.00	\$2,060.00
Public Participation Supervisor	4	\$118.00	\$472.00
Word Processing Tech.	4	\$57.00	\$228.00
SUBTOTAL	353		\$42,709.00

II. Interim Measures Oversight

Project Manager conducts site visit with technical support, reviews Progress Report, IM Completion Report, and issues IM Completion Letter.

COST ESTIMATE FOR REVIEW AND APPROVAL OF IM OVERSIGHT			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	80	\$116.00	\$9,280.00
Supervisor - SHSEG I	8	\$134.00	\$1,072.00
Geologist - HSEG	60	\$116.00	\$6,960.00
Supervising Geologist- SHSEG I	2	\$134.00	\$268.00
Industrial Hygienist	24	\$115.00	\$2,760.00
Senior Industrial Hygienist	1	\$131.00	\$131.00
Staff Toxicologist	30	\$149.00	\$4,470.00
Senior Toxicologist	1	\$156.00	\$156.00
Staff Counsel	4	\$152.00	\$608.00
Senior Counsel	2	\$175.00	\$350.00
Word Processing Tech.	4	\$57.00	\$228.00
SUBTOTAL	216		\$26,283.00

III. RCRA Facility Investigation

Project Manager reviews the Current Conditions Report, RFI Workplan, Health and Safety Plan, prepares and issues a Notice of Deficiency (NOD); reviews and approves revised RFI Workplan, and Current Condition Report; coordinates with Public Participation staff in the preparation of a Public Involvement Plan (PIP) or RFI Summary Fact Sheet.

COST ESTIMATE FOR RCRA FACILITY INVESTIGATION			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	160	\$116.00	\$18,560.00
Supervisor - SHSEG I	15	\$134.00	\$2,010.00
Geologist - HSEG	76	\$116.00	\$8,816.00
Supervising Geologist- SHSEG I	8	\$134.00	\$1,072.00
Industrial Hygienist	24	\$115.00	\$2,760.00
Senior Industrial Hygienist	1	\$131.00	\$131.00
Staff Toxicologist	24	\$149.00	\$3,576.00
Senior Toxicologist	3	\$156.00	\$468.00
Staff Counsel	4	\$152.00	\$608.00
Senior Counsel	2	\$175.00	\$350.00
Public Participation Specialist	30	\$103.00	\$3,090.00
Public Participation Supervisor	2	\$118.00	\$236.00
Word Processing Technician	4	\$57.00	\$228.00
SUBTOTAL	353		\$41,905.00

IV. RCRA Facility Investigation (RFI) Oversight

Project Manager visits the facility to take split samples, and review progress reports.

COST ESTIMATE FOR RFI OVERSIGHT			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	100	\$116.00	\$11,600.00
Supervisor - SHSEG I	15	\$134.00	\$2,010.00
Geologist - HSEG	60	\$116.00	\$6,960.00
Supervising Geologist- SHSEG I	8	\$134.00	\$1,072.00
Industrial Hygienist	24	\$115.00	\$2,760.00
Senior Industrial Hygienist	3	\$131.00	\$393.00
Staff Toxicologist	24	\$149.00	\$3,576.00
Senior Toxicologist	1	\$156.00	\$156.00
Staff Counsel	8	\$152.00	\$1,216.00
Senior Counsel	4	\$175.00	\$700.00
Public Participation Specialist	4	\$103.00	\$412.00
Public Participation Supervisor	1	\$118.00	\$118.00
Word Processing Tech.	4	\$57.00	\$228.00
SUBTOTAL	256		\$31,201.00

V. RCRA Facility Investigation (RFI) Report Review/Approval

Project Manager reviews RFI Report, issues NOD, reviews/approves revised RFI Report and determines whether Corrective Measure Study (CMS), Interim Measure (IM), or no further action is warranted.

COST ESTIMATE FOR REVIEW AND APPROVAL OF RFI REPORT			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	90	\$116.00	\$10,440.00
Supervisor - SHSEG I	8	\$134.00	\$1,072.00
Geologist - HSEG	68	\$116.00	\$7,888.00
Supervising Geologist- SHSEG I	8	\$134.00	\$1,072.00
Staff Toxicologist	40	\$149.00	\$5,960.00
Senior Toxicologist	2	\$156.00	\$312.00
Staff Counsel	4	\$152.00	\$608.00
Senior Counsel	2	\$175.00	\$350.00
Word Processing Tech.	4	\$57.00	\$228.00
SUBTOTAL	226		\$27,930.00

VI. Risk Assessment

Project Manager coordinates and reviews Risk Assessment with Toxicologist and Geologist. The task will include review of the following: Facility Characterization, Chemical Identification, Exposure Assessment, Toxicity Assessment, Risk Characterization, Ecological Risk Assessment, and Action Levels\Media Cleanup Standards.

COST ESTIMATE FOR RISK ASSESSMENT			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	112	\$116.00	\$12,992.00
Supervisor - SHSEG I	10	\$134.00	\$1,340.00
Geologist - HSEG	20	\$116.00	\$2,320.00
Supervising Geologist- SHSEG I	2	\$134.00	\$268.00
Staff Toxicologist	60	\$149.00	\$8,940.00
Senior Toxicologist	3	\$156.00	\$468.00
Staff Counsel	4	\$152.00	\$608.00
Senior Counsel	2	\$175.00	\$350.00
Word Processing Tech.	4	\$57.00	\$228.00
SUBTOTAL	217		\$27,514.00

VII. Corrective Measure Study (CMS)

Project Manager reviews CMS Workplan (Treatability Study may be required in the Workplan), issues NOD, reviews/approves revised CMS Workplan, visits the Facility if Treatability Study is conducted, reviews Progress Reports, reviews CMS reports, issues NOD on CMS Report review, reviews/approves revised CMS Report, coordinates with Public Participation staff in the preparation of a Fact Sheet regarding potential remedial alternatives (community meeting might be necessary).

COST ESTIMATE FOR CORRECTIVE MEASURE STUDY			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	180	\$116.00	\$20,880.00
Supervisor - SHSEG I	16	\$134.00	\$2,144.00
Geologist - HSEG	170	\$116.00	\$19,720.00
Supervising Geologist- SHSEG I	14	\$134.00	\$1,876.00
Industrial Hygienist	24	\$115.00	\$2,760.00
Senior Industrial Hygienist	1	\$131.00	\$131.00
Staff Toxicologist	55	\$149.00	\$8,195.00
Senior Toxicologist	5	\$156.00	\$780.00
Staff Counsel	4	\$152.00	\$608.00
Senior Counsel	2	\$175.00	\$350.00
Word Processing Tech.	4	\$57.00	\$228.00
SUBTOTAL	475		\$57,672.00

VIII. Remedy Selection and Notice of Decision

Project Manager evaluates proposed remedies, and media cleanup standards presented in the approved CMS Report. Based on the evaluation, DTSC may propose a corrective measure(s) for implementation at the Facility.

COST ESTIMATE FOR REMEDY SELECTION			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	152	\$116.00	\$17,632.00
Supervisor - SHSEG I	10	\$134.00	\$1,340.00
Geologist - HSEG	30	\$116.00	\$3,480.00
Supervising Geologist- SHSEG I	8	\$134.00	\$1,072.00
Staff Toxicologist	20	\$149.00	\$2,980.00
Senior Toxicologist	1	\$156.00	\$156.00
Staff Counsel	4	\$152.00	\$608.00
Senior Counsel	2	\$175.00	\$350.00
Word Processing Tech.	1	\$57.00	\$57.00
SUBTOTAL	228		\$27,675.00

IX. Corrective Measures Implementation (CMI)

Project Manager consults with Public Participation staff and plan community involvement strategy, reviews Conceptual Design and Public Involvement Plan, issues NOD, reviews and approves the following: modified Conceptual Design and Public Involvement Plan, Operation and Maintenance Plan, Construction Workplan, Health and Safety Plan, Financial Assurance Documentation, Progress Reports, facility visit, mails fact sheet periodically, reviews/approves Construction Completion Report, and Corrective Measure Completion Report.

COST ESTIMATE FOR CORRECTIVE MEASURES IMPLEMENTATION			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	320	\$116.00	\$37,120.00
Supervisor - SHSEG I	30	\$134.00	\$4,020.00
Geologist - HSEG	300	\$116.00	\$34,800.00
Supervising Geologist- SHSEG I	30	\$134.00	\$4,020.00
Industrial Hygienist	24	\$115.00	\$2,760.00
Senior Industrial Hygienist	2	\$131.00	\$262.00
Staff Toxicologist	40	\$149.00	\$5,960.00
Senior Toxicologist	4	\$156.00	\$624.00
Staff Counsel	5	\$152.00	\$760.00
Senior Counsel	1	\$175.00	\$175.00
Public Participation Specialist	40	\$103.00	\$4,120.00
Public Participation Supervisor	4	\$118.00	\$472.00
Word Processing Tech.	8	\$57.00	\$456.00
SUBTOTAL	808		\$95,549.00

X. California Environmental Quality Act (CEQA)

A) For Interim Measures

Project Manager prepares CEQA Initial Study, and Negative Declaration, coordinates with Public Participation Staff in the following Public Notice preparation: Fact Sheet, radio announcement, Public Notice, newspaper advertisement, mass duplication and mailing, public hearing presentation, if necessary; and responds to public comments.

COST ESTIMATE FOR CEQA - INTERIM MEASURES			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	80	\$116.00	\$9,280.00
Supervisor - SHSEG I	8	\$134.00	\$1,072.00
Branch Chief	1	\$147.00	\$147.00
Geologist - HSEG	24	\$116.00	\$2,784.00
Supervising Geologist	2	\$134.00	\$268.00
Environmental Planner	24	\$108.00	\$2,592.00
Senior Environmental Planner	2	\$129.00	\$258.00
Staff Toxicologist	10	\$149.00	\$1,490.00
Senior Toxicologist	1	\$156.00	\$156.00
Staff Counsel	8	\$152.00	\$1,216.00
Senior Counsel	4	\$175.00	\$700.00
Public Participation Specialist	4	\$103.00	\$412.00
Public Participation Supervisor	1	\$118.00	\$118.00
Word Processing Tech.	8	\$57.00	\$456.00
Publication Costs			\$750.00
SUBTOTAL	177		\$21,699.00

B) For Corrective Measures Implementation

Project Manager prepares CEQA Initial Study, and Negative Declaration, coordinates with Public Participation Staff in the following Public Notice

preparation: Fact Sheet, radio announcement, Public Notice, newspaper advertisement, mass duplication and mailing, public hearing presentation, if necessary; and responds to public comments.

COST ESTIMATE FOR CEQA - CORRECTIVE MEASURES IMPLEMENTATION			
	HOURS	HOURLY RATE + INDIRECT @ 191.68%	AMOUNT
Project Manager - HSEG	80	\$116.00	\$9,280.00
Supervisor - SHSEG I	8	\$134.00	\$1,072.00
Branch Chief	1	\$147.00	\$147.00
Geologist - HSEG	24	\$116.00	\$2,784.00
Supervising Geologist- SHSEG I	2	\$134.00	\$268.00
Environmental Planner	24	\$108.00	\$2,592.00
Senior Environmental Planner	2	\$129.00	\$258.00
Staff Toxicologist	10	\$149.00	\$1,490.00
Senior Toxicologist	1	\$156.00	\$156.00
Staff Counsel	8	\$152.00	\$1,216.00
Senior Counsel	4	\$175.00	\$700.00
Public Participation Specialist	4	\$103.00	\$412.00
Public Participation Supervisor	1	\$118.00	\$118.00
Word Processing Tech.	8	\$57.00	\$456.00
Publication Costs			\$750.00
SUBTOTAL	177		\$21,699.00

SUMMARY

COST ESTIMATE SUMMARY FOR MARTIN METALS FINISHING, INC.	
ACTIVITY	AMOUNT
I. Interim Measures	\$42,709.00
II. Interim Measure Oversight	\$26,283.00
III. RCRA Facility Investigation	\$41,905.00
IV. RFI Oversight	\$31,201.00
V. RFI Report Review/Approval	\$27,930.00
VI. Risk Assessment	\$27,514.00
VII. Corrective Measure Study	\$57,672.00
VIII. Remedy Selection	\$26,675.00
IX. Corrective Measures Implementation	\$95,549.00
X. CEQA	
A) Interim Measures	\$21,699.00
B) Corrective Measures Implementation	\$21,699.00
SUBTOTAL	\$420,836.00
10% Project Management	\$42,084.00
20% Contingency	\$84,168.00
TOTAL ESTIMATED COST	\$547,088.00