WARNING

IMPORTANT NOTICE
DO NOT DETACH

SUPERFUND CONFIDENTIAL BUSINESS INFORMATION

All or a portion of the attached document is claimed to be confidential business information by the submitter pursuant to CERCLA, as amended, §104. Unless and until EPA makes a determination that the document is not confidential business information, it must be treated as such.

Any person handling or using the attached document in any way is responsible for preventing unauthorized disclosure while in his or her possession. §1905 of title 18 of the United States Code and CERCLA, as amended, §104(e)(7)(B) provide penalties for disclosure of confidential business information. They include criminal penalties and adverse personnel actions.

The document may not be disclosed further or copied by you except as authorized by The Superfund CBI Manual. If you have any questions concerning the appropriate handling of this document, please contact the attorney assigned to this case or the Office of Regional Counsel, EPA, Region 9.

SDMS DOCID# 1139166

OMEGA CHEMICAL CORPORATION

(SSID 09BC)

Work-Performed Compilation

for

Costs from 10/1/80-8/31/12

ENVIRONMENTAL SERVICES ASSISTANCE TEAMS

ESAT 68-W0-1028
(68-W-01-028)

ICF INCORPORATED

SFUND RECORDS CTR
2200812

ENVIRONMENTAL SERVICES ASSISTANCE TEAM (ESAT)
Region 9
ICF Consulting, Inc.
Task Order 005: Superfund Analytical and Quality Assurance Support

Performance Period: 10/1/03 (or Date of Contracting Officer Approval) to 9/30/04

Purpose

The Contractor shall provide analytical and laboratory support to the Region 9 Laboratory and quality assurance technical support to the Region 9 Quality Assurance Office, for activities under the Superfund program. The Contractor shall perform work according to the following Tasks and in response to technical direction from the Task Order Project Officer (TOPO) (or back-up) designated for the respective Task. For Task 1, the Contractor work performance shall meet the minimum quality levels described in the attached Performance Requirements Summary.

Task 1. Organic and Inorganic Laboratory Analyses at the Region 9 Laboratory
Task 2. Field Analytical Services (FASP) at Superfund Sites
Task 3. Region 9 Laboratory Health and Safety and Environmental Compliance
Task 4. Region 9 Laboratory Quality Assurance
Task 5. Data Review and Quality Assurance Document Review
Task 6. Task Order Management and Quality Assurance

Task 1. Organic and Inorganic Laboratory Analyses at the Region 9 Laboratory

This task is performed at the Region 9 Laboratory. The major performance areas are as follows.

Area 1-1. Organic Analyses
Area 1-2. Inorganic Analyses
Area 1-3. Laboratory Support
Area 1-4. Evaluation of New or Proposed Region 9 Laboratory Methods or Instrumentation and Development of Standard Operating Procedures

Area 1-1. Organic Chemistry Analyses

The Contractor shall perform organic sample preparation and analysis using the analytical methods specified in SOPs. Samples will be identified to the Contractor by TDF. The TDF will specify the site name, site operable unit if any, case number, number of samples, sample matrices, analyses and procedures, anticipated date of sample receipt, deliverables, and any non-routine requirements. Analyses may include performance evaluation samples. All work is to be completed in accordance with the SOPs and any modifications specified by TDF.

Complete data packages are to be prepared according to Region 9 Laboratory SOPs, unless otherwise modified by TDF. The TOPO will provide procedures and electronic formats

for other types of deliverables, which may include a results report with spreadsheet, with the TDF.

SOPs for sample preparation and analysis, reporting, and documentation are identified by SOP number and topic and accessible on the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server. Performance of other organic methods, such as modifications to CLP methods, may also be requested.

Deliverables: Each sample analysis project assigned to the Contractor will require the submission of data reports. The standard reporting deliverables are :1) complete data packages, 2) preliminary reports, or 3) analytical reports. The routine schedule for submittal of deliverables is 30 days from receipt of last sample in SDG. Other types of reports and turnaround times may be requested in TDFs.

Area 1-2. Inorganic Analyses

The Contractor shall perform inorganic sample preparation and analysis using the analytical methods specified in SOPs. Samples will be identified in the TDF. The TDF will specify the site name and operable unit if any, case number, number of samples, sample matrices, analyses and procedures, anticipated date of sample receipt, deliverables, and any non-routine requirements. Analyses may include performance evaluation samples. All work is to be completed in accordance with the SOPs and any modifications specified by TDF.

Complete data packages are to be prepared according to Region 9 Laboratory SOPs, unless otherwise modified by TDF. The TOPO will provide procedures and electronic formats for other types of deliverables, which may include a results report with spreadsheet, with the TDF.

SOPs for sample preparation and analysis, reporting, and documentation are identified by SOP number and topic and accessible on the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server. Performance of other inorganic methods, such as modifications to CLP methods, may also be requested.

Deliverables: Each sample analysis project assigned to the contractor will require the submission of data reports. The standard reporting deliverables are :1) complete data packages, 2)preliminary reports, or 3) analytical reports. The routine schedule for submittal of deliverables is 30 days from receipt of last sample in SDG. Other types of reports and turnaround times may be requested in TDFs.

Area 1-3: Laboratory Support

The Contractor shall perform routine laboratory instrument and equipment maintenance, cleaning and preparation of glassware and equipment, preparation and shipping of QA/QC samples, and sample custodial duties in support of TO activities. The Contractor shall clean

labware at the Regional Laboratory according to SOPs. The Contractor shall monitor refrigerator and freezer temperatures and deionized water conductivity in accordance with SOPs. In addition, the Contractor shall maintain records of laboratory coat laundry exchanges and receipt of laundered laboratory coats.

The Contractor shall clean visitors' safety glasses, according to the following procedure: every Friday, pick up used safety glasses from the receptionist's area. Clean any visible oily residue from the safety glasses, using a soft tissue. Load glasses into the tray of the Lancer glassware washer and process them using program #10. After the safety glasses have completely dried, place them individually into whirl-pack bags, seal, and return the clean glasses to the receptionist.

SOPs are identified by SOP number and topic and accessible on the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server.

Deliverables: Cleaned labware and safety glassses. Laboratory coat tracking records will be subject to inspection by the WAM at any time.

Area 1-4. Evaluation of New or Proposed Region 9 Laboratory Analytical Methods or Instrumentation and Development of Standard Operating Procedures

The Contractor may be required to evaluate new analytical methods and/or instrumentation for performance, adequacy of procedures or documentation, or other criteria as described in TDFs. The Contractor shall develop SOPs for new analytical procedures or instrumentation, upon issuance of TDFs. SOP 850 for the preparation and usage of SOPs shall be used and is accessible on the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server.

Deliverables: The Contractor shall submit to the TOPO a written report documenting the results of each method or instrument evaluation, or an SOP, as requested, according to the schedule specified in the TDF.

Task 2. Field Analytical Services (FASP) at Superfund Sites

The Contractor shall perform field quantitative analyses and other applicable support functions, including facilities maintenance and repair and health & safety and environmental compliance activities. The location of performance is at Superfund or Superfund-related sites, or while the mobile laboratory is stationed at the Regional Laboratory. The major task areas are as follows:

Area 2-1. Organic and Inorganic Analyses and Field Measurements
Area 2-2. Applications Support (Development of Standard Operating Procedures and Evaluation of New or Proposed FASP Methods or Instrumentation)
Area 2-3. Maintenance and Repair of FASP Facilities and Equipment

Area 2-1. Organic and Inorganic Chemistry Analyses and Field Measurements

The Contractor shall mobilize for field operations, collect field samples or receive samples collected by other EPA contractors or collaborators, and perform sample preparation and analysis or field measurements, utilizing the analytical methods specified in the SOPs for each parameter. Site- or project-specific requirements and samples will be identified to the Contractor by TDF. The TDF will specify the site name, approximate number of samples, sample matrices, analyses and procedures, anticipated dates of field operations and/or sample receipt, deliverables, and any non-routine requirements. Analyses may include performance evaluation samples. All work is to be completed in accordance with the SOPs and any modifications specified by TDF. SOPs for sample preparation and analysis, reporting, and documentation are identified by SOP number and topic and accessible on the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server or from the TOPO.

Deliverables: Each sample analysis project assigned to the Contractor will require the submission of preliminary and final data reports, and a project summary at the end of the project, according to reporting requirements stated in the method SOPs and the schedules specified by TDF. The Contractor shall provide to the FASP TOPO a copy of all reports (not including raw data) described in Area 4-2, FASP Quality Assurance.

Area 2-2. Applications Support (Development of Standard Operating Procedures and Evaluation of New or Proposed Methods or Instrumentation)

The Contractor shall develop SOPs for new analytical procedures or instrumentation, upon issuance of a TDF identifying the SOP(s). SOP 850 for the preparation and usage of SOPs shall be used and is accessible in the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server. The Contractor may also be required to evaluate new analytical methods and/or instrumentation for performance, adequacy of procedures or documentation, or other criteria upon issuance of a TDF identifying the methods, instrumentation, or documentation.

Deliverables: Each time that the Contractor prepares a new SOP, a hard copy and an electronic copy of the revision shall be submitted to the TOPO, according to the schedule stated in the TDF, for comment and approval before implementation. Following evaluation of a method or instrument, the Contractor shall submit to the TOPO a written report documenting the results, according to the schedule specified in the TDF.

Area 2-3. Maintenance and Repair of FASP Facilities and Equipment

The Contractor shall maintain the FASP facilities, including the base support facility trailer and mobile laboratory support vehicles, in road-ready condition to allow deployment for field projects within a reasonable amount of time (typically one to two weeks) after receiving a field analytical assignment. Example activities include: maintenance and repairs to the trucks and mobile laboratories, such as tune-ups, tire, fluid and other routine checks; installation of instruments and gases; and electrical repairs. The Contractor shall perform routine field

instrument and equipment maintenance, cleaning and preparation of glassware and equipment, and sample custodial duties.

Applicable SOPs are identified by SOP number and topic and are accessible in the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server or from the TOPO.

Deliverable: Monthly report to the TOPO on the status of all vehicles and health and safety and environmental compliance.

Task 3. Region 9 Laboratory & FASP Health and Safety and Environmental Compliance

The major task areas are as follows:

Area 3-1. Laboratory & FASP Health & Safety and Environmental Compliance Activities
Area 3-2. Maintenance and Development of Standard Operating Procedures

Area 3-1. Laboratory & FASP Health & Safety and Environmental Compliance Activities

The Contractor shall perform routine laboratory health & safety and environmental compliance activities pertaining to the Region 9 Laboratory and the FASP mobile laboratories and field analytical activities. All work is to be completed in accordance with the SOPs and any modifications specified by TDF. The SOPs are identified by SOP number and topic and are accessible in the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server.

In addition to the preceding activities, designated staff shall participate in the coordination of Region 9 Laboratory Environmental Management System (EMS) activities as directed by the TOPO. In addition one designated staff member shall attend one 1-hour laboratory health and safety committee meeting per month.

Deliverables: As specified by SOPs and TDFs.

Area 3-2. Maintenance and Development of Standard Operating Procedures

The Contractor shall review and if necessary revise SOPs used for the performance of work in this Task, or develop SOPs, upon the issuance of a TDF identifying the SOP(s).

Deliverables: each time that the Contractor revises a current SOP or prepares a new SOP, a hard copy and an electronic copy of the revision shall be submitted to the TOPO, according to the schedule stated in the TDF, for comments and approval prior to implementation

Task 4. Region 9 Laboratory Quality Assurance

The Contractor shall implement the quality assurance and quality assurance reporting provisions in the Region 9 Laboratory Quality Assurance Plan which are applicable to the activities performed in this Task Order. The major task areas are as follows:

Area 4-1. On-Site Laboratory Quality Assurance
Area 4-2. FASP Quality Assurance
Area 4-3. Maintenance and Development of Standard Operating Procedures

Area 4-1. On-Site Laboratory Quality Assurance

The Contractor shall perform quality assurance tasks as established in the Region 9 Laboratory Quality Assurance Plan or as assigned by TDF, in support of the technical activities described in Task 1 (Laboratory Analyses at the Region 9 Laboratory.) Routine QA/QC tasks shall include the establishment of analytical control limits, monitoring and evaluation of quality control data, review of logsheets on a daily (run logs) or weekly (standards preparation logs) basis, and internal system audits (walk-throughs) at a minimum of one technical area per month.

The Contractor shall perform method detection limit (MDL) studies for all new analytical procedures before beginning sample analyses. MDL studies shall be performed on an annual basis (or more frequently if major modifications to the analytical system are made or if required by the method or SOP) for each routinely analyzed matrix (water, solid, and/or tissue) for each analytical instrument. The Contractor shall follow MDL procedures found in 40 CFR Part 136, Appendix A. Instrument detection limit (IDL) studies shall be performed for inorganic analyses on a quarterly basis according to the most recent CLP SOW.

The Contractor shall perform initial and continuing demonstrations of analytical method performance according to Performance-Based Measurement System (PBMS) specifications as stated in Chapter 5 (Quality Systems) of the NELAC Standards (http://www.epa.gov/ttn/nelac/standard.) The Contractor shall analyze Performance Testing (PT) and Performance Evaluation (PE) samples supplied by the TOPO, including CLP Quarterly Blind samples (QBs) and ESAT Program PE samples, as requested by TDF.

The Contractor shall investigate analytical problems and perform corrective action, at minimum as specified by the TOPO (who is the EPA Region 9 Laboratory QA Officer) in the Region 9 Laboratory Corrective Action database on the Region 9 LAN "APPS1" server. The Contractor shall respond to the TOPO concerning all items in the database which are related to ESAT operations, within one month after the item is entered into the database.

The Contractor shall provide new employee training and annual refresher training on technical and laboratory ethical practices. Documentation of the training shall be made available for review by the TOPO upon request at any time.

The Contractor shall monitor refrigerator and freezer temperatures and deionized water conductivity, and monitor thermometer readings against NIST reference thermometers.

All work is to be completed in accordance with the SOPs and any modifications specified by TDF. The SOPs are identified by SOP number and topic and accessible on the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server.

Deliverables:

The Contractor shall submit a quarterly QA report to the TOPO, briefly describing SOPs written, reviewed, and/or revised; MDL and IDL studies and PBMS demonstrations of capability performed, along with a summary of results of these studies; performance evaluation sample analyses completed; corrective actions initiated; problems encountered; internal audits performed; and other QA-related issues addressed.

The Contractor shall submit to the TOPO the raw data documentation for MDL and IDL studies performed, PBMS demonstrations of capability, and PT/PE sample analyses. The Contractor shall include the TOPO on the distribution list for reports of systems audits and recommendations .

Upon resolution of each corrective action, the Contractor shall submit a corrective action report describing problems identified and actions taken.

Area 4-2. FASP Quality Assurance

The Contractor shall perform quality assurance tasks as established in the Region 9 Laboratory Quality Assurance Plan or as assigned by TDF, in support of the technical activities described in Task 2 (FASP).) Routine QA/QC tasks shall include the establishment of analytical control limits, monitoring and evaluation of quality control data, daily review of logsheets during analytical projects, and internal system audits (walk-throughs) at a minimum of one audit per year per field technique.

The Contractor shall perform method detection limit (MDL) studies for all new analytical procedures before beginning sample analyses. MDL studies shall be performed on an annual basis (or more frequently if major modifications to the analytical system are made or if required by the method or SOP) for each routinely analyzed matrix (water, solid, and/or tissue) for each analytical instrument. The Contractor shall follow MDL procedures found in 40 CFR Part 136, Appendix A. Instrument detection limit studies shall be performed for inorganic analyses according to the most recent CLP SOW, prior to one field project per quarter or once per quarter.

The Contractor shall perform initial and continuing demonstrations of analytical method performance according to Performance-Based Measurement System (PBMS) specifications as stated in Chapter 5 of the NELAC Standards. The Contractor shall perform project-specific PE

sample analyses following SOP 870, Processing and Reporting of Performance Evaluation Samples.

The Contractor shall investigate analytical problems and perform corrective action, at minimum as specified by the TOPO (who is the EPA Region 9 Laboratory QA Officer) in the Region 9 Laboratory Corrective Action database on the Region 9 LAN "APPS1" server. The Contractor shall respond to the TOPO concerning all items in the database which are related to ESAT operations, within 1 month after the item is entered into the database. The Contractor shall follow SOP 820, Laboratory Discrepancy and Corrective Action Reporting Procedure.

Deliverables:

After each field assignment, the Contractor shall submit a QA report to the TOPO describing the QA activities performed to prepare for field operations, any unanticipated QA actions performed, and any equipment-related issues which might have affected the quality of the data. The report shall be provided to the TOPO concurrent with submittal of the first data package for the project to the FASP TOPO.

The Contractor shall include in the Task 4 QA quarterly report a brief description of SOPs written, reviewed, and/or revised; MDL and IDL studies and PBMS method performance demonstrations, along with a summary of results of these studies; performance evaluation sample analyses completed; corrective actions initiated; problems encountered; internal audits performed; and other QA-related issues addressed.

The Contractor shall submit to the TOPO the raw data documentation for MDL and IDL studies performed, project-specific PE sample analyses, and PBMS performance demonstrations. The Contractor shall include the TOPO on the distribution list for reports of systems audits and recommendations .

Upon resolution of each corrective action, the Contractor shall submit a corrective action report describing problems identified and actions taken.

The Contractor shall provide to the FASP TOPO a copy of all reports (not including raw data) described herein.

Area 4-3: Maintenance and Development of Standard Operating Procedures (SOPs)

The Contractor shall review SOPs used for the performance of work in Tasks 1 and 2 and this Task on an annual basis, discuss needed revisions with the TOPO, and revise SOPs upon receipt of TDFs. The Contractor shall develop SOPs for new quality assurance activities upon receipt of TDFs. (The development of SOPs for new analytical procedures or instrumentation are addressed in Tasks 1 and 2.) SOP 850 for the preparation and usage of SOPs shall be used and is accessible on the "R9Lab SOPs" database on the Region 9 LAN "APPS1" server.

Deliverables: Each time that the Contractor revises a current SOP or prepares a new SOP, a hard copy and an electronic copy of the revision shall be submitted to the TOPO, according to the schedule stated in the TDF, for comments or approval prior to implementation.

Task 5. Data Review and Quality Assurance Document Review

The Contractor shall perform tiered data review and technical review or preparation of quality assurance documents. The major task areas are as follows:

Area 5-1. Data Review
Area 5-2. Technical Review or Preparation of Quality Assurance Documents
Area 5-3. Maintenance and Development of Standard Operating Procedures

Area 5-1. Data Review

The Contractor shall perform tiered technical review utilizing manual and automated methods, according to "Documentation of Data Validation Requirements in QAPPs, FSPs, and SAPs" (Region 9 QA Office, January 14, 2000) or other Regional guidance specified by the TOPO, on data submitted by CLP laboratories, EPA staff at the Regional Laboratory, Regional contract laboratories, laboratories sub-contracted by other EPA contractors, or Potentially Responsible Party (PRP) laboratories. Data packages for review will be identified to the Contractor by TDF. The TDF will specify the site name, case and SDG numbers, laboratory name, the tier(s) of review and any non-routine requirements and explanations. All work is to be completed in accordance with the SOPs listed below and any modifications specified by TDF. Tiers 1 and 3 reviews are described in the SOPs and checklists; Tier 2 reviews will be defined by TDF.

Data review shall follow a standard process with variations according to the type of laboratory, as described in SOPs and below. SOPs relevant to this task area are tabulated on the following pages. Upon receipt of a data package, the Contractor shall perform a cursory completeness review and notify the TOPO of any missing pages. When supplementary technical information is required to complete a data validation report, the Contractor shall submit a telephone record log ("TRL") identifying the case and SDG numbers, laboratory contact name and fax number (from the data package), the information needed, and request for a laboratory response to be sent to ESAT within 7 days. The Contractor shall use the format specified in Organic and Inorganic Data Validation Templates to prepare data validation reports.

CLP Data. The Contractor shall perform cursory completeness case audits of CLP data packages (aka "complete SDG files," or "CSFs"), complete the CSF Inventory Checklist and CSF Inventory Sheets ("Region" column only), and email the TOPO regarding any missing items. For TRLs, the following procedure shall be adhered to:

The Contractor shall fax the TRL to the laboratory, and email a copy to the TOPO. If no response is received within 7 days of the fax, the Contractor shall re-fax the

TRL to the laboratory once only. The Contractor shall email an updated TRL status list to the TOPO, with a copy to the CLP PO, whenever a TRL event occurs, up to one update per week. The TRLs shall be categorized as follows: 1) TRLs which affect data quality (i. e., cause data to be qualified if no laboratory response is received) and 2)other TRLs (e.g., requests for missing documentation, which do not obstruct the report); and shall indicate the dates faxed or re-faxed

Non-CLP Data. The Contractor shall email the TRL to the TOPO.

Deliverables: Each data review assigned to the Contractor will require the submission of reports and data spreadsheets (Lotus 1-2-3.) The standard reporting deliverables will include unvalidated data spreadsheets ("unvalidated Table 1As"), Tier 1, 2, or 3 data review/validation reports containing data spreadsheets (Tier 1, 2, or 3 "Table 1As"), in hardcopy and/or electronic format, and a copy of the completed and signed ESAT review checklist and peer review checklist. The specific type of deliverable and format will be specified in TDFs, as will the schedule for submission of reports. Turnaround times will generally be specified in the following ranges, in number of days after issuance of the TDF:

Unvalidated Table 1A and Tier 1A Review Report	7 days
Tier 2 Report	7-24 days
Tier 3 Report	20-24 days

	DATA REVIEW TECHNICAL SOPs
	REGION 9 SOPS
901	SOP for Data Review of CLP Volatile and Semivolatile Data Packages
902	Guidelines for Data Review of CLP Pesticide/PCB Data Packages
903	[Discontinued]
904	Guidelines for Data Review of Regional Analytical Program (RAP) and Potentially Responsible Party (PRP) Organic Data Packages
905	SOP for Data Review of Regional Analytical Program (RAP) and Potentially Responsible Party (PRP) 8021A Data Packages
906	Guidelines for Data Review of CLP Inorganic Data Packages
907	Guidelines for Data Review of Regional Analytical Program (RAP) and Potentially Responsible Party (PRP) Inorganic Data Packages
908	Guidelines for Peer Review of Organic Data Review Reports
909	Guidelines for Peer Review of Inorganic Data Review Reports

	DATA REVIEW TECHNICAL SOPs
	Attachments to ESAT SOPs
	Organic Template
	ESAT Region 9 Review Form
	ESAT Organic Data Review Worksheet
	Inorganic Template
	ESAT Inorganic Data Review Worksheet
	Option 1A Check Forms, summary memo format, checklists and peer review checklists (Metals, Semivolatiles, Pesticides, Volatiles) (January, 2000)
	Option 3 data validation checklists (GC/HPLC and OC Pesticides) and peer review checklists (Organic and Inorganic) (January, 2000)
	Agency Guidance (http://www.epa.gov/superfund/programs/clp/guidance.htm)

	DATA REVIEW ADMINISTRATIVE SOPs
900	Guidelines for Case Audits on Data Packages
910	Copies Needed for Data Review Reports

Area 5-2. Technical Review or Preparation of Quality Assurance Documents

The Contractor shall perform quality assurance (QA) and technical reviews of QA project plans (QAPPs), field sampling plans (FSP), workplans, RI/FS reports, data quality assessments, laboratory manuals, QA plans and analytical SOPs, and other technical documents. QAPPs will be reviewed for adequacy of elements specified in Agency-wide and Regional guidance. The TDF will specify the site name, type of document, type of review requested, and any non-routine requirements.

The Contractor shall prepare draft Regional QA guidance documents such as field sampling plan guidance, based on existing Regional or Agency guidance and procedures, upon receipt of a TDF. The TDF will specify Regional policies which must be reflected in the draft document. The Contractor shall update method SOPs, prepare SOPs for newly-adopted methods, or prepare tables of QC specifications and criteria for other methods, upon issuance of a TDF identifying the SOP(s) or method(s).

All work is to be completed in accordance with the SOPs and any modifications specified by TDF. The SOPs are identified in the following pages.

QA DOCUMENT REVIEW SOPS
AGENCY QA GUIDANCES (http://www.epa.gov/quality/qa_docs.html)
REGIONAL QA GUIDANCES (http://www.epa.gov/region9/qa/index.html)
Sampling and Analysis Plan (SAP) Guidance and Template Version 1, EPA Analytical Services Used, R9QA/001.1, April, 2000
Sampling and Analysis Plan Guidance and Template Version 2, Private Analytical Services Used, R9QA/002.1, April, 2000
Instructions for One-Time Sampling Event Sampling and Analysis Plan (Region 9)
Regional Policy for Determination of Volatile Compound (VOC) Concentrations in Soil and Solid Matrices
Policy Statement on Designation and Qualifications of a Quality Assurance Officer for Environmental Data Operations at Federal Facilities in United States Environmental Protection Agency (EPA) Region 9, June, 1998
Memo on Review and Amendment of QAPPs for Federal Facility Cleanup Sites (Dan Opalski to Region IX Federal Facilities Environmental Program Managers), September 1996
MOU on Implementation of IG Recommendations Recommendations Resulting from Audit of Environmental Data Quality at DOD Superfund Sites in Region 9 (IG Audit Report No. E1SKF5-09-0031-5100505), July 1996
Laboratory Documentation Requirements for Data Validation (9QA-07-97)
Documentation of Data Validation Requirements in QAPPs, FSPs, and SAPs (Region 9 QA Office, January 14, 2000)

Deliverables: The routine schedule for report delivery will be in the range of 7-14 days after issuance of the TDF, and will be defined in the TDF. The Contractor shall submit reports to the TOPO in hardcopy and on diskette. Reviewed materials will be returned to the TOPO with the deliverable. Other deliverables, in hardcopy and/or diskette, and delivery schedules will be specified in TDFs.

Area 5-3. Maintenance and Development of Standard Operating Procedures

The Contractor shall review and if necessary revise SOPs used for the performance of work in this Task, or develop SOPs for validation of data generated by new analytical procedures or instrumentation, upon receipt of a TDF identifying the SOP(s).

Deliverables: each time that the Contractor revises a current SOP or prepares a new SOP, a hard copy and an electronic copy of the revision shall be submitted to the TOPO, according to the schedule stated in the TDF, for comments and approval before implementation.

Task 6. Task Order Management and Quality Assurance

The major task areas are as follows:
Area 6-1. Management and Administration
Area 6-2. Reports and Meetings

Area 6-1. Management and Administration

This Task Order is issued as term-form. The Contractor shall submit to the Contracting Officer an initial cost proposal based on the historical workload of the preceding 12-month period. The cost estimate shall consist of:

1. Estimates of total labor hours, labor rates, and costs (unloaded and loaded), showing LOE and non-LOE labor, prime and subcontractor labor, and P/T-level categories as defined by the Contractor's Final Revised Proposal (January 31, 2001 and February 12, 2001);
2. Estimates of other direct costs and travel costs (loaded and unloaded) broken out according to the Contractor's standard accounting categories; and
3. Explanation of loading factors and assumptions.

During the performance period the Government may adjust the LOE ordered, whereupon the Contractor shall submit a revised cost estimate for approval.

The Contractor shall provide appropriate technical and administrative management in the performance of the TO, including oversight of the timeliness and quality of deliverables, efficiency of work processes, cost effectiveness, and maintenance of records and files. The Contractor shall carry out staff recruitment and hiring to supply the requisite specific technical expertise, and ensure that staff are trained and proficient on the contract technical requirements, contract and laboratory ethics, and health and safety procedures. The Contractor shall implement a health and safety program which is adequate to ensure the occupational safety of its employees.

All site-specific or project-specific technical direction (TDFs) will be posted electronically in a TDF database located on the Region 9 LAN. The Contractor shall access the database daily to retrieve TDFs.

The Contractor shall maintain current and inactive ESAT records accrued throughout the contract period, showing cost and site information, for eventual disposition to the Federal Records Center. The Contractor shall provide data and information regarding costs, site specific accounting and other issues in order to respond to contract reviews and cost recovery requests as needed.

Area 6-2. Reports and Meetings

The Contractor shall prepare and submit all periodic reports specified in the Contract Attachment 2, "Reporting Requirements." In the Attachment, the terms "discrete batches of work" and "individual activity" will include activities resulting from Technical Direction Forms (TDFs) and

from general TO activities.

Monthly Financial Report. The Contractor shall provide a Labor Category Allocation Report tabulating the labor hours and average hourly rate of each labor category, by Task in the Task Order, for the month being reported and the overall cumulative hours and average hourly rate for the Ordering Period.

All ODC charges shall be clearly identified and explained. Monthly ODC costs may be suspended if the costs are not clearly identified. Copies of receipts for expenses shall be provided by the Contractor upon request by the TOPO, PO, or CO **within 5 working days** (excluding holidays and weekends) of the request.

Monthly Site Specific Listing Report. The following information shall be included, by Task in the TO: the site name, site-specific ID number, current monthly cost, and cumulative cost for the Ordering Period.

Weekly Status Report. At the discretion of individual TOPOs, the Contractor shall submit a weekly status report or spreadsheet covering the activities of the calendar week. At a minimum, the weekly status report shall include a listing of the site- or project-specific activities in progress and completed, and their due dates. The report format and content and submittal schedule shall be designed by the Contractor, and subject to revision by the TOPO.

The Contractor task leads and/or the Program Manager shall participate in regular meetings or as needed with individual TOPOs, regarding the status of activities and any problems or observations. The Program Manager shall meet with the PO approximately weekly regarding overall contract activities and administrative issues, and significant technical issues.

Monthly Voucher. The Contractor shall provide an advance copy of the public voucher to the PO. The Site-Specific Detail Attachment (see Contract Attachment 6, Site-Specific Invoicing Instructions) shall be provided to the PO in a Lotus1-2-3 format electronically (e-mail or 3.5" diskette) and hardcopy.

Quality Assurance Reports. The contractor shall provide copies of any quality assurance audit reports which include the findings and associated corrective actions to the PO and appropriate TOPO.

SOPs. All ESAT SOPs developed to support the work and/or services performed under this contract shall be provided to the CO, PO, or TOPO upon request, in hardcopy and/or electronic versions. All SOPs which support the work and/or services performed under this contract become the property of the Environmental Protection Agency. Any or all of the SOPs as described above, shall be provided by the Contractor for inspection or review.

Task Order Performance Requirements Summary
Task Area 1 (Laboratory Analysis)

Desired Outcome	Performance Requirement	Acceptable Quality Level
1. Data Technical Quality. Analytical work is of known quality and conforms with laboratory client expectations.	Analytical work adheres to approved laboratory SOPs and TDFs. Deviations from SOPs and/or TDFs are justified, appropriate, and properly documented.	95% of deliverables meet performance requirements.
2. Report Technical Quality. Analytical reports and EDDs are accurate, contain no errors, and conform with laboratory client expectations.	Analytical reports adhere to Laboratory SOPs and standard format. EDDs conform with agreed-upon format. All information in report and EDD is accurate and complete.	**2. a.** 95% of analytical reports and EDDs are free of **major errors**. Major errors are those errors that could significantly impact laboratory client decision-making. Examples include: reporting wrong result, switching sample results, not reporting a significant QC problem, or miscalculating and misreporting sample results and/or QC measurement results. **2. b.** 80% of analytical reports and EDDs are free of **minor errors**. Minor errors are errors which are not likely to lead to decision-making errors. Examples include: incorrect report or EDD format, typographical or spelling errors in report text or headers, rounding or significant figures errors, incorrect entry of dates of sample collection or receipt, or improperly-applied data qualifiers.
3. Timeliness. Deliverables meet the timeliness expectations of laboratory client.	Deliverables are submitted to theTOPO by the due date on the TDF.	90% of deliverables are delivered by due date.

Task Order B01

ESAT 68-W0-1028
(68-W-01-028)

SFUND RECORDS CTR
2210791

ORDER FOR SUPPLIES OR SERVICES

PAGE OF PAGES

IMPORTANT: Mark all packages and papers with contract and/or order numbers.

1. DATE OF ORDER: 03/29/01
2. CONTRACT NO. (If any): 68-W-01-028
3. ORDER NO.: 0001
4. REQUISITION/REFERENCE NO.: PR-HQ-01-13679
5. ISSUING OFFICE (Address correspondence to): Environmental Protection Agency

6. SHIP TO:
a. NAME OF CONSIGNEE: ROSE Y. FONG, TOPO
b. STREET ADDRESS: 75 HAWTHORNE STREET
c. CITY: SAN FRANCISCO
d. STATE: CA
e. ZIP CODE: 94105
f. SHIP VIA:

7. TO:
a. NAME OF CONTRACTOR: ICF INCORPORATED
b. COMPANY NAME:
c. STREET ADDRESS: 9300 LEE HWY
d. CITY: Fairfax
e. STATE: VA
f. ZIP CODE: 22031

8. TYPE OF ORDER
[ ] a. PURCHASE
REFERENCE YOUR: _____
Please furnish the following on the terms and conditions specified on both sides of this order and on the attached sheet, if any, including delivery as indicated.

[X] b. TASK – Except for billing instructions on the reverse, this task order is subject to instructions contained on this side only of this form and is issued subject to the terms and conditions of the above-numbered contract.

9. ACCOUNTING AND APPROPRIATION DATA: See Attached
10. REQUISITIONING OFFICE: Same as Block 6

11. BUSINESS CLASSIFICATION (Check appropriate box(es))
[ ] a. SMALL [X] b. OTHER THAN SMALL [ ] c. DISADVANTAGED [ ] d. WOMEN OWNED

12. F.O.B. POINT: Same as Block 6
13. PLACE OF
a. INSPECTION: Same as Block 6
b. ACCEPTANCE: Same as Block 6
14. GOVERNMENT B/L NO.:
15. DELIVER TO F.O.B. POINT ON OR BEFORE (Date):
16. DISCOUNT TERMS: N/A

17. SCHEDULE (See reverse for Reductions)

ITEM NO. (a)	SUPPLIES OR SERVICES (b)	QUANTITY ORDERED (c)	UNIT (d)	UNIT PRICE (e)	AMOUNT (f)	QUANTITY ACCEPTED (g)
	See Attached					

18. SHIPPING POINT
19. GROSS SHIPPING WEIGHT
20. INVOICE NO.
17(h). TOT. (Cont. pages)

21. MAIL INVOICE TO:
SEE BILLING INSTRUCTIONS ON REVERSE
a. NAME: Environmental Protection Agency
b. STREET ADDRESS (or P.O. Box): Research Triangle Park Financial Management Center (MD-32)
c. CITY: Research Triangle Park
d. STATE: NC
e. ZIP CODE: 27711

$94,311.00
17(i). GRAND TOTAL

22. UNITED STATES OF AMERICA BY (Signature): Barbara H. Stearrett
23. NAME (Typed): BARBARA H. STEARRETT
TITLE: CONTRACTING/ORDERING OFFICER

NSN 7540-01-152-8083
PREVIOUS EDITION NOT USABLE

OPTIONAL FORM 347 (REV. 6/95)
Prescribed by GSA/FAR 48 CFR 53.213(e)

Summary Information

Title: TO 0001: B01 Superfund Analytical and Quality Assurance Support
Period of Performance: From: 04/01/01
To: 04/13/01
Award Date: 03/29/01
Total Funding: $94,311.00

This task order is being issued as an emergency task order to allow work to begin while final negotiations are completed on the overall task order statement of work. This task order is being issued as a level-of-effort order until negotiations are complete. At that time the order will be converted to cost-plus-fixed-fee completion.

Accounting/Appropriation Data

DCN	BFYS	Appr.#	Org	Program Element	Site/ Project	Cost Org	Obj Clss	Amount	P/C
F0R033	01	T	72F00LA	50102D	HQ00LA00		2505	$94,311.00	C *

* Indicates funding that has been allocated.

Funding Breakout

Acct.Info	Funding Category	Amount
FY2001 - F0R033	Estimated Cost Fixed Fee	
	Total:	

Procurement Management Roles

TASK ORDER PROJECT OFFICER:

U.S. E.P.A.
Attn: ROSE Y. FONG
75 HAWTHORNE STREET
SAN FRANCISCO, CA 94105

Attachments

Attachment Type
STATEMENT OF WORK - SUPERFUND ANALYTICAL & QUALITY ASSURANCE SUPPORT

Task Order Totals

Category	Amount
Estimated Cost	
Fixed Fee	

Task Order Level-of-Effort Ordered: The Government hereby orders 2,555 labor hours.

TECHNICAL DIRECTION No. B0105024

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME: Omega Chemical**
[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac

TO NUMBER: B01 **DATE**: 6-29-01

TASK: 5. Superfund Data Review/Document Review **TOPO**: Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Document Information:
Name: OU-1 Downgradient GW Investigation SAP
DCN : BCCA003Q01MCP1 & BCCA004S01MCP1
Document Type : SAP

Special Instructions: none.

Deliverable:

Memo addressed as follows:

FROM: [ESAT Reviewer]
TO: Mathew Plate, Environmental Scientist
Quality Assurance Program, PMD-3

Please indicate ESAT Contract No. 68-W-01-028, Task Order No. B01, and the TDF number at the end of the memo.

Due Date: 7-9-01

Date Rec'd 7-10 Transmitted 7-10 MP

OmegaSAP.wpc

ICF Consulting, Inc. / Laboratory Data Consultants, Inc.
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

July 10, 2001

From: Doug Lindelof, QA Document Reviewer
Environmental Services Assistance Team (ESAT)

To: Mathew Plate, Environmental Scientist
Quality Assurance Program, PMD-3

Subject: Draft Field Sampling Plan and Quality Assurance Project Plan, Omega Chemical Superfund Site, Whittier, California (Quality Assurance Program Document Control Numbers [DCNs] BCCA004S01MCP1 and BCCA003Q01MCP1)

The subject field sampling plan (FSP) and quality assurance project plan (QAPP), prepared by Roy F. Weston, Inc. and dated June, 2001, have been reviewed. This review is based on information from the following documents:

- *EPA Requirements for Quality Assurance Project Plans*, EPA QA/R-5 March 2001;
- *EPA Guidance for the Data Quality Objectives Process*, EPA QA/G-4 August 2000;
- *Preparation of a U.S. EPA Region 9 Field Sampling Plan for EPA Lead Superfund Projects* 9QA-05-93; and
- *Documentation of Data Validation Requirements in Quality Assurance Project Plans (QAPPs), Field Sampling Plans (FSPs) and Sampling and Analysis Plans (SAPs)* EPA Region 9 Memorandum, January 14, 2000.

The subject FSP and QAPP address most of the elements required by Regional and Agency guidance documents. However, there are a few items required by FSP guidance which are not present in the plans. In addition, a number of inconsistencies and discrepancies have been identified and are discussed in the following comments.

Concerns

1. [QAPP: Appendix A, Data Quality Objectives] Step 2 of the data quality objectives (DQO) process identifies cadmium and chromium as contaminants of potential concern (COPCs). However, neither cadmium or chromium are mentioned in the FSP or QAPP background information. If cadmium and chromium are of concern, they should be discussed in the FSP and QAPP background information, and previous results, if available, should be provided.

2. [FSP: Table 1, Sample Analyses Summary] Regional FSP guidance recommends that Request for Analysis Tables be prepared which include all field and QC samples, number of containers per sample, total number of containers, preservation criteria, holding times, and sample number designations. It is recommended tables be prepared for all analyses to be performed daily (on-site laboratory), quarterly, and annually.

Table 1 indicates that soil/sediment samples for volatile organic compound (VOC) analysis will be collected in two 2-ounce glass jar with 14 day holding time from collection. Please refer to *Region Interim Policy for Determination of VOC Concentrations in Soil and Solid Matrices, June 23, 1999.*

3. [QAPP: Section 1.4.5, Data Quality Indicators (DQIs); Section 1.4.6, Data Quality of Field v. Fixed Laboratory Measurements; Section 1.6, Documentation and Records] Sections 1.4.6 and 1.6 cite Appendix B for the Region 9 ESAT-FASP SOP. The review copy of the QAPP did not include SOPs in this Appendix, just the title sheet. Section 1.4.6 states that "[A]lthough the cone penetrometer testing (CPT) sample collection/field analysis portion of the project is to provide only screening data for subsequent well development and installation, target detection limit is 1 ug/L." Section 1.6 cites the FASP SOP for the data reporting format. The QAPP must provide the target compounds list (TCL), quantitation limits, and data reporting format based on the project needs. In addition all cited attachments should be included in the final version of the QAPP.

4. [QAPP: Section 1.3.1, Scope of Work] Section 1.3.1 states that validation will be performed through the EPA CLP or Regional Laboratories. Data validation is not performed by or through laboratories. This statement should be revised to indicate that the Regional EPA QA Office or their contractors will perform data validation.

5. [QAPP: Table 1-1, Precision, Accuracy, and Sensitivity Parameters] Table 1-1 should be revised to specify perchlorate analysis by EPA Method 314.0 instead of 300.0M. Note that Step 3 of the DQO process, Identify Inputs to the Decision, identifies EPA Method 314.0 as an analytical method for the project.

6. Table 1-1 cites laboratory control charts in addition to fixed limits for spike recovery and surrogate recovery. If control charts will be used for acceptance criteria, they must be provided in the data packages for data validation purposes.

7. [QAPP: Section 2.3, Quality Control Requirements; Section 1.4.5, Data Quality Indicators] Section 2.3 states that the laboratories' DQOs for completeness and the field team's ability to meet the DQO for representativeness are set at 90%. Section 1.4.5 specifies a 95% limit for completeness for groundwater analysis. This discrepancy should be resolved.

8. [QAPP: Table 2-3, Routine Laboratory Equipment Maintenance; Table 2-4, Summary of Calibration Procedures] Tables 2-3 and 2-4 include maintenance and calibration specifications for a number of instrument types, e.g., inductively coupled plasma (ICP), spectrophotometers, and pH meters; however, chromatography is not included in the tables. Since both gas chromatography (GC) and ion chromatography (IC) will be used to analyze samples from this site, they should be included in these tables.

9. [QAPP: Section 2.8, Data Management Procedures; Section 4.1.1, Analytical Procedures/Quality Control/Calibration] Sections 2.8 and 4.1.1 indicate 100% of data will be validated under Tier 2. The QAPP must describe Tier 2 validation in detail, including identification of analytes that will be verified to the raw data.

10. [FSP: Section 2.2 Sampling Equipment Decontamination] The decontamination steps in Section 2.2 should include a rinse with dilute nitric acid if metals are contaminants of concern at the site.

11. [FSP: Section 2.3.1, Sample Preservation and Holding Times] Section 2.3.1 describes the pH check to ensure proper preservation of the sample. However, the description states that the sample bottle will be "topped off if necessary." Samples collected for volatile organic compound (VOC) analysis should not be "topped off." If there is head space in the vial, the vial should be discarded and another vial filled.

12. [FSP: Section 3.2.2, Sampling Locations and Frequency] Section 3.2.2 indicates the near-source portion of the plume is well characterized as to concentrations and, to a lesser degree, lateral extent. The FSP should include a figure that depicts the groundwater plumes based on all previous data. It is also recommended that the groundwater flow direction be depicted on a site map.

Technical information for this review was provided under ESAT Contract No. 68-W-01-028, Task Order B01, Technical Direction No. B0105024 by Doug Lindelof of ICF Consulting. Please call me at (510) 412-2388 if you have any questions.

TECHNICAL DIRECTION FORM
#B0102005

ACCOUNT NO:09 BC LA00 **SITE NAME**: Omega Chemical
{} RI/RA {X} Site Assess {} Enforcement {} Emergency Resp. {} Brownfields {} Fed. Facilities

---

TO NUMBER: 9-01-B01-02 **DATE:** July 13, 2001

TO TITLE: Region 9 Superfund Field Analytical Support Program

---

EPA TOPO: Liza Finley

DESCRIPTION OF SERVICES TO BE PERFORMED: **(**Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

ESAT will perform a three week field analytical event for measuring VOCs in water with the GC/MS (FASP SOP #902). Prepare for a duration of four weeks in the field, arriving one week prior to start of sampling event for instrument set-up and prep. ESAT will mobilize the truck trailer to the Omega Chemical Superfund site in Whittier, CA. The mobile lab shall be ready to begin accepting samples for analysis August 13, 2001.

ESAT will analyze approximately 100 water samples in the field. The samples will be analyzed for the compounds on the project specific analyte list, principally PCE and its degradation compounds, Freon 11, Freon 113 and methylene chloride. The samples will be analysed in the field by a two-tiered approach. Samples will be analyzed first for screening for high concentrations. In the event a QC parameter is not met, the value in the initial screening analysis will still be reported to the project manager and qualified as an estimated value in the preliminary spreadsheet. Additional analysis of sample will be performed to determine the quanity of the other compounds present to the best of the analytical chemist's ability. The analyst will not run concentrations of samples that will hinder the progress of the sampling event. For samples that are at lower concentration levels (~200ppm) the chemist will quantitate each of the compounds to the 1ppm detection limit and will perform the low-level quanitation standard as part of the daily QC checks.

Daily documentation will be completed for all data from the water analyses. Additional preparation, if necessary, of data into data packages will be determined.

Preliminary data results of the initial analysis of samples will be delivered by hardcopy from the mobile lab to the Project Manager on site in spreadsheet format and electronically to TOPO. The spreadsheet results will be provided to the TOPO within 48 hours and within 24-48 hours to the Project Manager on site. The spreadsheet illustrating the completed analysis of each sample will be provided within holding time of sample. Upon further QA/QC of data provide TOPO with a FASP final data report.

Deliverables:

August 3, 2001 - FASP will prepare mobile truck trailer for mobilization to Whittier, CA. ESAT will provide TOPO with appropriate check lists reflecting mobilization preparedness for VOC analysis and vehicle inspections(FASP SOP #903).

August 6, 2001 - Mobilize truck lab to Whittier, CA and arrive on site for electrical hook-up.

August 13 - 31, 2001 - **FASP Lab Support During Project** - FASP lab will be prepared and ready to analyze samples for VOCs by GC/MS (FASP SOP #902). All QC will be performed for project specific compounds.

Within 24 - 48 hrs of sample analysis - FASP will provide preliminary data results spreadsheets for initial analyses to Project Manager on site and electronically to TOPO for VOA.

Within sample holding time - FASP will provide spreadsheet of completed analysis for samples.

August 31, 2001 - Demobilize truck lab.

September 14, 2001 - ESAT will review daily instrument documentation and prepare final FASP report (final data spreadsheets and case narrative) for all water samples analysed on site. Provide report to TOPO. If necessary, data validation packages will be prepared as specified by TOPO.

WAM Signature_____Date_____
RPO Signature_____Date_____

Comments:

SFUND RECORDS CTR
2207475

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

Date September 20, 2001

TO: Mathew Plate, FASP TOPO, EPA Region 9, Laboratory Section, PMD2

FROM: Awinash Manmade, FASP Task Manager AM

SUBJECT: Omega Chemical Site Case Narrative and Results

As assigned under EPA Contract No. 68-W-01-028, TO # B01 and TDF B0102005, ESAT has completed the analysis of sixty-nine (69) water samples from the Omega Chemical Superfund site for FASP VOC analysis following SOP902. Attached are the summary of analytical results and report narrative along with a diskette containing the report narrative and results summary file. The raw data is being retained by FASP and will be available if required. Work is in progress on the remaining tasks assigned under this TDF. If you have any questions regarding this information please contact me at extension 2387.

cc: Jerry Vail, ESAT Program Manager

B0102005-0541cover.wpd

USEPA REGION 9 LABORATORY
REPORT NARRATIVE

SITE:	**OMEGA Chemicals, Whittier CA**
SAMPLE DELIVERY GROUP:	**NA**
PROGRAM:	**Superfund**
DOCUMENT CONTROL #:	**ESTW-B0102005-0541**
ANALYSIS PERFORMED:	**GC/MS Volatiles**
DATE SUBMITTED:	**September 20, 2001**
SAMPLE NUMBERS:	

Sample No.	Sample No.	Sample No.	Sample No.
GW301-PP007-0081	GW301-PP020-0050	GW301-PP014-0052	GW301-PP052-1055
GW301-PP002-0084	GW301-PP020-0073	GW301-PP038-0073	GW301-PP053-4003
GW301-PP015-0084	GW301-PP025-0050	GW301-PP032-4002	GW301-PP053-0049
GW301-PP012-0063	GW301-PP026-0041	GW301-PP029-0045	GW301-PP054-0062
GW301-PP008-0070	GW301-PP017-0056	GW301-PP032-0062	GW301-PP055-0065
GW301-PP006-0070	GW301-PP017-1056	GW301-PP040-0062	GW301-PP056-0058
GW301-PP006-1070	GW301-PP041-0065	GW301-PP045-0052	GW301-PP057-0062
GW301-PP011-0059	GW301-PP010-0045	GW301-PP045-1052	GW301-PP058-0064
GW301-PP001-0084	GW301-PP009-0047	GW301-PP004-0086	GW301-PP059-0063
GW301-PP011-0072	GW301-PP018-0058	GW301-PP043-0051	GW301-PP060-4005
GW301-PP016-0080	GW301-PP019-0058	GW301-PP044-0051	GW301-PP060-0065
GW301-PP013-0056	GW301-PP036-0052	GW301-PP046-0047	GW301-PP060-1065
GW301-PP003-0094	GW301-PP036-1052	GW301-PP047-0048	GW301-PP061-0065
GW301-PP023-0063	GW301-PP034-0033	GW301-PP048-0099	GW301-PP062-0038
GW301-PP024-0058	GW301-PP033-0038	GW301-PP049-0063	GW301-PP062-2001
GW301-PP021-4001	GW301-PP037-0043	GW301-PP050-0072	
GW301-PP021-0058	GW301-PP039-0033	GW301-PP051-0055	
GW301-PP022-0058	GW301-PP035-0036	GW301-PP052-0055	

GENERAL COMMENTS

Sixty nine (69) water samples were received at the EPA Region 9 FASP Mobile Laboratory at OMEGA Superfund site in Whittier, CA from 08/15/01 to 08/23/01 and at the Region 9 Laboratory on 09/06/01.

These samples were analyzed for volatile organics in accordance with the USEPA Region 9 Laboratory SOP 902, FASP Volatile Organic Compound Analysis for project specific list of analytes.

The samples contained suspended silt and were centrifuged upon receipt except GW301-PP021-4001, GW301-PP032-4002, GW301-PP053-4003, GW301-PP060-4005 and GW301-PP062-2001.

SAMPLE RECEIPT AND PRESERVATION

Samples delivered to FASP mobile laboratory were hand delivered immediately after collection. Aliquots were used for analysis and remaining samples were kept in a refrigerator and maintained at 4±2 °C. Samples were not preserved with acid and were analyzed within 7 days of sampling.

No issues related to shipping and preservation were encountered with samples delivered to Region 9 laboratory

QA/QC AND ANALYTICAL COMMENTS

The following comments appear on the Summary of Analytical Results:

A Results detected at concentrations below the quantitation limit (QL) but greater than or equal to one half the QL are reported with a "J" flag to indicate the uncertainty of quantitation at these levels.

B All MS/MSD results for QC samples GW301-PP029-0045, GW301-PP036-0052 and GW301-PP056-0058 were within QC limits, except for the following analytes:

Sample ID	Date	Analyte	MS %Rec	MSD % Rec	QC Limit	RPD	QC Limit
GW301-PP029-0045	08/22/01	Benzene				36	11
GW301-PP029-0045	08/22/01	Trichloroethene				31	14
GW301-PP029-0045	08/22/01	Toluene				26	13
GW301-PP029-0045	08/22/01	Chlorobenzene				34	13
GW301-PP036-0052	08/26/01	1,1-Dichloroethene	-70	-404	61-145	99	14
GW301-PP036-0052	08/26/01	Trichloroethene	-104	-653	71-120	99	14
GW301-PP056-0058	08/26/01	Trichloroethene				26	14

C The following LCS analyte failed to meet criteria; since these values are biased low, the reported values for this compound(s) for the associated samples should be considered as estimated (J).

LCS File ID	Date	Analyte	% Rec	QC Limit
LWG0820	08/20/01	1,2-Dchloropropane	55	60 - 140

D The Continuing Calibration for the following analytes exceeded QC limits. The compounds in samples and method blank associated with a positive result (ie, low bias) calibration factor are flagged as estimated in the summary of results spreadsheet.

Instrument	Date	Analyte	Filename	Criteria	QC Limit	Result
HP5973G	08/20/01	1,2-Dichloropropane	CWG0820	%D	30	46
HP5973G	08/20/01	1,1,2-Trichloroethane	CwG0820	Min RF	0.08	0.069

E The results reported from undiluted sample GW301-P019-0058 were estimated since the sample was analyzed 12 hours after BFB injection. No sample was available for reanalysis.

All internal standard areas and retention times were within QC limits.

All samples were analyzed within the holding time of 7 days.

Any questions in reference to this data package may be addressed to Awinash Manmade at (510) 412-2387.

Glossary

Method Blanks

A laboratory method blank is laboratory reagent water or sand with all reagents, surrogates, and internal standards added and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

Storage Blanks

A storage blank is laboratory reagent water that is stored in the laboratory refrigerator for one week. All reagents, surrogates, and internal standards are added at the time of analysis and it is processed through the same sample preparation and analytical procedures as the other blanks. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage.

Surrogates

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogate compounds prior to analysis. Surrogate percent recovery (%R) provides information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

Matrix Spike and Spike Duplicate Analysis

Matrix spike sample and spike duplicate analyses provide information about the effect of the sample matrix on sample preparation and measurement. Poor percent recovery (%R) results and large relative percent difference (RPD) between duplicates may indicate inconsistent laboratory technique, sample nonhomogeneity in soils, or matrix effects which may interfere with analysis.

Internal Standards

Internal standards are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but not normally found in environmental samples. All samples are spiked with internal standard compounds prior to analysis. Internal standard recoveries and retention times provide information about both the instrument performance on individual samples and the possible effects of the sample matrix on the analytical results.

Laboratory Control Samples

Laboratory control samples (LCSs) are analyzed daily to demonstrate comparability of the continuing calibration standard. It is equivalent to the continuing calibration standard, but it is obtained from an independent source.

ANALYTICAL COMMENTS

Example calculation using data for Trichloroethene obtained for sample GW301-PP009-0047 analyzed on 08/2001

$$\text{Conc. } (\mu g/L) = A_x * AMT_{IS} * DF / (A_{IS} * RRF)$$
$$= 343200 * 5\ \mu g/L * / (396997*0.371)$$
$$= 12.61\ \mu g/L \approx 13\ \mu g/L$$

where

A_x = area of the characteristic ion of the compound
AMT_{IS} = concentration of internal standard in $\mu g/L$ (5 $\mu g/L$)
DF = dilution factor
A_{IS} = area of the characteristic ion of the associated internal standard
RRF = analyte's relative response factor from the daily calibration

Instrument Calibration:

The initial calibration demonstrates that the instrument is capable of meeting the minimum relative response factors (RRFs) and has a linear calibration curve.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

All LCS results were within QC requirements, except the following analytes:

LCS File ID	Date	Analyte	% Rec	QC Limit
LWG0907	09/07/01	Vinyl chloride	147	60 -140

Site Name:	Omega Chemical	**Case #:**	R01S61 (CANCELLED)
City/State:	Whittier, CA	**Date Assign:**	
CERCLIS #:	CAD042245001	**SSID:** **OU:**	BC 02
Project: $F		**Purpose:**	RI/FS
Sampling Dates:	October 15 - 19, 2001	**TAT:**	21 days
Sampler Name:	Donald W. "Bill" Clarke III	**Agency:**	Weston
Phone:	(818) 382-1806	**Fax:**	(818) 382-1801
RPM/Section/Phone:	Nancy Riveland-Har	SFD-7-4	4-2371

//

# Samples	Matrix	Analyses/Method
23	Water	TOC
23	Water	TDS
23	Water	Anions (Cl, SO4)
23	Water	Alkalinity
23	Water	CLO4
23	Water	CN
23	Water	NO3/NO2

Comments: Data Validation:

TOC	100% Tier 1A
TDS	100% Tier 1A
Anions	100% Tier 1A
Alkalinity	100% Tier 1A
CLO4	100% Tier 1
CN	100% Tier 1A
NO3/NO2	100% Tier 1A

Site Name:	Omega Chemical	**Case #:**	R02S08
City/State:	Whittier, CA	**Date Assign:**	
CERCLIS #:	CAD042245001	**SSID:** **OU:**	BC 02
Project: $F		**Purpose:**	RI/FS
Sampling Dates:	??	**TAT:**	21 days
Sampler Name: Donald W. "Bill" Clarke III		**Agency:**	Weston
Phone:	(818) 382-1806	**Fax:**	(818) 382-1801
RPM/Section/Phone:	Nancy Riveland-Har	SFD-7-4	4-2371

///

# Samples	Matrix	Analyses/Method	Validation
23	Water	TOC	100% Tier 1A
23	Water	TDS	100% Tier 1A
23	Water	Anions (Cl, SO4)	100% Tier 1A
23	Water	Alkalinity	100% Tier 1A
23	Water	CLO4	100% Tier 1A
23	Water	CN	100% Tier 1A
23	Water	NO3/NO2	100% Tier 1A

Comments: Sampling dates contingent upon CPT results.

TECHNICAL DIRECTION NO. B0105069

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME: Omega Chem OU-1**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE: 12-26**-01

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package Information **Project Information:**
Case# 29992 Data type V, S, P EPA Site Manager Nancy Riveland-Har SDG# Y0BX9 Mail Code SFD-7-4 Laboratory DATAC
[ ] EPA-Lead Non-CLP [ ] PRP SDG MY08P7 is also provided, for archiving only.

Level of Review: Tier 3 for VOCs focusing on PCE & PCE degradation products, Freon, and aromatics e. g. BTEX. No review for SV and P.

Deliverable	**Due date**
[X] Validation Report	1-21-02

Pkg to ESAT: 12-27 11W:V

Complete: 2/7 Rec: 2/8 Transmit: 2/12

SFUND RECORDS CTR
1110-00342

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072791

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
HI/NV/CA Cleanup Section, SFD-7-4

THROUGH: Rose Fong EF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105069

DATE: February 7, 2002

SUBJECT: Review of Analytical Data

Attached are comments resulting from ESAT Region 9 Tier 3 review of the following analytical data:

SITE:	Omega Chem OU-1
SITE ACCOUNT NO.:	09 BC LA00
CERCLIS ID NO.:	CAD042245001
CASE NO.:	29992
SDG NO.:	Y0BX9
LABORATORY:	Datachem Laboratories, Inc. (DATAC)
ANALYSIS:	Volatiles
SAMPLES:	11 Water Samples
COLLECTION DATE:	November 15 and 16, 2001
REVIEWER:	Denise Powell, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment
cc: Cecilia Moore, CLP PO USEPA Region 5
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105069-1117/29992/Y0BX9V.wpd

Data Validation Report

Case No.: 29992 SDG No.: Y0BX9
Site: Omega Chem OU-1
Laboratory: Datachem Laboratories, Inc. (DATAC)
Reviewer: Denise Powell, ESAT/LDC
Date: February 7, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0BX9, Y0BY0, Y0BY1, Y0BY2, Y0BY3, Y0BY4, Y0BY5, Y0BY6, Y0BY7, Y0BY8, and Y0BY9
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	November 15 and 16, 2001
Sample Receipt Date:	November 17, 2001
Extraction Date:	Not Applicable
Analysis Date:	November 25 and 26, 2001

FIELD QC:

Trip Blanks (TB):	Y0BY0
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0BY6
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0BY2 and Y0BY3

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK01:	Y0BX9, Y0BX9DL, Y0BY0, Y0BY1, Y0BY1DL, Y0BY2, Y0BY2DL, Y0BY3, Y0BY3DL, Y0BY4, Y0BY4DL, Y0BY6, and Y0BY9DL
VBLK02:	Y0BY5, Y0BY6DL, Y0BY7, Y0BY7DL, Y0BY8, Y0BY8DL, Y0BY9, Y0BY9MS, Y0BY9MSD, and VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Initial and Continuing Calibration Summary

MS - Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

CLP PO ACTION:

None

CLP PO ATTENTION:

1) Detected results and quantitation limits for some analytes are qualified as estimated (J) due to calibration problems.

2) Detected results and quantitation limits for some analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside of QC limits.

SAMPLING ISSUES:

(1) Detected results for chloroform in samples Y0BY5 and Y0BY8 are qualified as nondetected and estimated (U,J) due to contamination in the trip blank Y0BY0.

(2) Toluene was detected in equipment blank Y0BY6 at a concentration of 0.42 μg/L. No qualification of data due to equipment blank contamination is warranted.

ADDITIONAL COMMENTS:

Samples Y0BX9, Y0BY1, Y0BY2, Y0BY3, Y0BY4, Y0BY5, Y0BY8, and Y0BY9 were analyzed at dilutions (2-fold to 200-fold) due to high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factors.

Tentatively identified compounds (TICs) detected in the samples are reported on the Form 1LCFs and are attached to this report. No TICs were reported for samples Y0BX9, Y0BY0, Y0BY1, Y0BY2, Y0BY3, Y0BY6, Y0BY7, and Y0BY8.

Standard preparation logs were missing in the data package and could not be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached TRL for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*,
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	C, D
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	YES	
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS (DMCs)	NO	E
MATRIX SPIKE/DUPLICATES	YES	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	NO	A, F, H
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	G

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to trip blank contamination, and are flagged "U,J" in Table 1A.

- Chloroform in samples Y0BY5 and Y0BY8

Chloroform was found in trip blank Y0BY0 at a concentration of 0.49 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below. Chloroform detected in samples Y0BX9 and Y0BY1 were not qualified as nondetected and estimated (U,J) because the concentrations exceeded 10 times the amount in the trip blank.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although toluene was found in equipment blank Y0BY6 at a concentration of 0.42 μg/L, no data are qualified because toluene was not found in any of the samples associated with this equipment blank.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A

trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, methyl acetate, and 2-butanone in all samples and blanks

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on August 20, 2001. RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on November 25 and 26, 2001 (Table 2).

Detected results for the analytes listed above should be considered as the minimum values at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (Table 2). The quantitation of the analytes associated with these DMCs may have been affected by the low RRFs. See Comment E for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The RRF evaluates instrument sensitivity and is used in the quantitation of the target analytes.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent relative standard deviations (%RSDs) in the initial calibration, and are flagged "J" in Table 1A.

- 1,2-Dibromo-3-chloropropane and 1,2,3-trichlorobenzene in all samples and blanks

Percent RSDs exceeded the ≤30.0% validation criterion for the analytes listed above in the initial calibration performed on August 20, 2001 (Table 2).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recoveries outside method QC limits, and are flagged "J" in Table 1A.

{1,1,2,2-Tetrachloroethane-d2}
- 1,1,2,2-Tetrachloroethane and 1,2-dibromo-3-chloropropane in sample Y0BY0

{Bromoform-d}
- Dibromochloromethane, 1,2-dibromoethane, and bromoform in sample Y0BY1

Specific DMC recoveries which were outside the QC limits for the target analytes listed above are shown below.

Sample	DMC	% Recovery	QC limits
Y0BY0	1,1,2,2-Tetrachloroethane-d2	72	75-131
Y0BY1	Bromoform-d	72	76-135

Detected results for the analytes listed above may be biased low. Where the results are nondetected, false negatives may exist. Samples were not reanalyzed.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

F. Detected results for the following analyte are qualified as estimated due to high analyte concentration, and are flagged "J" in Table 1A.

- Acetone in samples Y0BY9MS and Y0BY9MSD

Concentrations of acetone in the QC samples Y0BY9MS and Y0BY9MSD are 11000 μg/L and 8100 μg/L (at 20-fold dilution), respectively. These values significantly exceed the 0.5-25 μg/L calibration range. The laboratory did not reanalyze these samples.

Results reported in Table 1A for this analyte are from the analysis at 20-fold dilution. These values are considered to be qualitatively acceptable but quantitatively questionable and should be considered as the minimum values at which the analyte is present in the samples.

G. In the analysis of the field duplicate pairs, the following outlier was obtained for the analyte listed below.

Analyte	Y0BY2 (D1) Conc. μg/L	Y0BY3 (D1) Conc. μg/L	RPD
Tetrachloroethene	240	180	28

A relative percent difference (RPD) of 28% was obtained for tetrachloroethene in the analysis of field duplicate pair Y0BY2 and Y0BY3. This value exceeds the ≤25% validation criterion. The effect on the data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix or poor sampling or laboratory technique.

H. Sample Y0BX9 was analyzed at a second dilution of 2000-fold, due to the high levels of tetrachloroethene. Results for tetrachloroethene are reported from the second dilution in Table 1A; results for all other analytes are reported from the primary analysis, which was diluted 200-fold.

Samples Y0BY1 and Y0BY4 were analyzed at second dilutions of 100-fold, due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, and tetrachloroethene. Results for trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, and tetrachloroethene are reported from the second dilutions in Table 1A; results for all other analytes are reported from the primary analyses, which were diluted 10-fold.

Samples Y0BY2 and Y0BY3 were analyzed at second dilutions of 20-fold, due to the high levels of tetrachloroethene. Results for tetrachloroethene are reported from the second dilutions in Table 1A; results for all other analytes are reported from the primary analyses, which were diluted 2-fold.

Sample Y0BY5 was analyzed at a second dilution of 50-fold, due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, and 1,1,2-trichloro-1,2,2-trifluoroethane. Results for trichlorofluoromethane, 1,1-dichloroethene, and 1,1,2-trichloro-1,2,2-trifluoroethane are reported from the second dilution in Table 1A; results for all other analytes are reported from the primary analysis, which was diluted 5-fold.

Sample Y0BY7 was analyzed at a 2-fold dilution due to the high levels of trichloroethene. Results for trichloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0BY8 was analyzed at a second dilution of 25-fold, due to the high levels of 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene. Results for 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene are reported from the second dilution in Table 1A; results for all other analytes are reported from the primary analysis, which was diluted 4-fold.

Sample Y0BY9 was analyzed at a second dilution of 200-fold, due to the high levels of acetone. Results for acetone are reported from the second dilution in Table 1A; results for all other analytes are reported from the primary analysis, which was diluted 20-fold.

B0101072

Author: Richard Bauer/R9/USEPA/US **Date:** 02/08/2002 11:13 AM

TECHNICAL DIRECTION FORM # B0101072 revised

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 2/8/02 (revised 2/13/02)

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	anions (CL, SO4), alkalinity, NO2+NO3, TOC, perchlorate, **sulfide**
R02S24	water	up to 40

Instructions: Analyze up to 40 water samples for anions by I.C.(Cl and SO4 only), alkalinity, TOC, NO2+NO3, and perchlorate following R9 Lab SOPs for methods 300.0, 2320, 415.1, 353.2, and 314.0; **and sulfide follwing R9 Lab SOP for EPA method 376.**

Deliverables

[x] Complete Data Package

[ ] Preliminary Report

[x] Analytical Report in each SDG

Due Dates

~~30~~ **20** days from receipt of last sample in each SDG

~~30~~ **20** days from receipt of last sample

Comments: **Revised 2/13/02 to add sulfide and change TAT to 20 days.**

Site Name:	Omega Chemical	**Case #:**	R02S24
City/State:	Whittier, CA	**Date Assign:**	
CERCLIS #:	CAD042245001	**SSID**: **OU:**	BC 02
Project:	$F	**Purpose:**	RI/FS
Sampling Dates:	Feb 13 - Feb 22, 2002	**TAT:**	21 days
Sampler Name:	Donald W. "Bill" Clarke III	**Agency**:	Weston
Phone:	(818) 382-1806	**Fax:**	(818) 382-1801
RPM/Section/Phone:	Nancy Riveland-Har	SFD-7-4	2-3251

//

# Samples	Matrix	Analyses/Method
29	Water	TOC
29	Water	TDS
29	Water	Anions (Cl, SO4)
29	Water	Alkalinity
29	Water	CLO4
29	Water	NO3/NO2
<31	Water	Sulfide

Comments:

21 day TAT on electronic (or faxed) preliminary data.   21 day TAT on hard copy data deliverable.

Sulfide analyses added 2/13/02 per contractor Project Manager request on 2/12/02.

Validation:

100% Tier 1A on all other analyses.

B0101073

Author: Richard Bauer/R9/USEPA/US **Date:** 02/08/2002 11:23 AM

TECHNICAL DIRECTION FORM # B0101073 (revised)

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical (IDW)

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 2/8/02 (revised 2/13/02)

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	metals, VOCs, TPH-G, TPH-D,O
R02S25	soil	up to 10

Instructions: Analyze up to 10 soil samples for metals, VOCs, TPH-G, TPH-D,O following R9 Lab SOPs for methods 6010, 7010, 7471, 8260, 5030/8015B, 3545/8015B.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[X] Preliminary Report	**7 days from reciept of samples**
[x] Analytical Report	30 days from receipt of last sample in each SDG

Comments: **Revised 2/13/02 to add requirement for preliminary results in one week TAT.**

Site Name:	Omega Chemical	**Case #:**	R02S25
City/State:	Whittier, CA	**Date Assign:**	
CERCLIS #:	CAD042245001	**SSID**: **OU:**	BC 02
Project:	$F	**Purpose:** Waste Characterization	
Sampling Dates:	2nd or 3rd week of Feb 2002	**TAT:**	7 days
Sampler Name:	Donald W. "Bill" Clarke III	**Agency**:	Weston
Phone:	(818) 382-1806	**Fax:** (818) 382-1801	
RPM/Section/Phone:	Nancy Riveland-Har	SFD-7-4	2-3251

//

# **Samples**	**Matrix**	**Analyses/Method**
3	Soil	VOCs (in En Core samplers)
2	Soil	VOCs
3	Soil	TPH-GRO/DRO/Motor Oil
3	Soil	Total Metals

Comments:

7 day TAT on faxed (electronic) preliminary data. Standard TAT on hard copy data deliverable.

VOCs TCL includes Freon 11, Freon 113, and MTBE.
Chlorinated VOCs are possible in low concentrations (estimated < 50 ug/kg).

TPH-GRO DL = 0.5 mg/kg.
TPH-DRO/Motor Oil DL = 5 mg/kg

Metals are the CA Code of Regulations Title 22 list.
Arsenic analysis by GFAA and not ICP-AES.
Elevated concentrations of metals are not expected.

Validation:

100% Tier 1A on all analyses.

TECHNICAL DIRECTION No. B0105079

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME: Omega Chem**
CERCLIS [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp []
Brownfields [] Fed Fac

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE**: 2-19-02

TASK: 5. Superfund Data Review/Document Review **TOPO**: Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Document Information:
Name: PRP On-Site Soils RI/FS Workplan
DCN : BCCA006W02VSF1
Document Type : FSP + QAPP

Special Instructions: none.

Deliverable:

Memo addressed as follows:

FROM: [ESAT Reviewer]
TO: [leave blank]
Quality Assurance Office, PMD-3

Please indicate ESAT Contract No. 68-W-01-028, Task Order No. B01, and the TDF number at the end of the memo.

Due Date: 3-4-02 Document and email comments

To ESAT: 2-20
Date Rec'd 3/5 Transmitted _____

B0105079.wpd

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

March 5, 2002

From: Doug Lindelof, QA Document Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

To:
Quality Assurance Program, PMD-3

Subject: On-Site Soils Remedial Investigation/Feasibility Study Work Plan Omega Chemical Superfund Site, Whittier, California (EPA QA Program Document Control Number [DCN] BCCA006W02VSF1)

A field sampling plan (FSP) and a quality assurance project plan (QAPP) included in a work plan (WP) for an on-site soils remedial investigation/feasibility study (RI/FS) at the Omega Chemical site, prepared for the Omega Chemical Site PRP Organized Group (OPOG) by Camp Dresser & McKee, Inc. (CDM) and dated February 14, 2002, were reviewed. The review was based on information provided in the following documents:

- *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations* (QA/R-5, March 2001);
- *Sampling and Analysis Plan Guidance and Template, Version 1, EPA Analytical Services Used* (R9QA/001 March 2000);
- *Guidance for the Data Quality Objectives Process* (EPA QA/G-4, August 2000);
- *Regional Interim Policy for Determination of Volatile Organic Compound (VOC) Concentrations in Soil and Solid Matrices* (EPA Memorandum, June 23, 1999);
- *Laboratory Documentation Requirements for Data Evaluation* (R9QA-004.1, March 2001); and
- *Documentation of Data Validation Requirements in Quality Assurance Project Plans, Field Sampling Plans, and Sampling and Analysis Plans* (EPA Memorandum, January 14, 2000).

The FSP and QAPP are included in the RI/FS WP as Sections 6 and 7, respectively. The FSP and QAPP include elements required by Agency and Regional guidance requirements; however, a number of concerns were identified in the review and are discussed in the following comments.

Comments

1A. [Section 6.3.1, Analytical Methods and Detection Limits; Section 6.4.1, Surface Soil Sampling] Section 6.3.1 states sample preparation for soil and investigative derived waste (IDW) will be in accordance with EPA Method 5030, and that soil volatile organic compound (VOC) results will be considered quantitative even though the Encore sampler and EPA extraction Method 5035 will not be utilized. VOC results obtained using EPA Method 5030, however, may not be considered to be of sufficient quality for EPA decision making. Region 9 policy requires the use of Method 5035, or an equally or more effective method, for the collection of representative and precise data

for VOCs in soil and solid matrices. This policy is applicable to data collection activities producing data for USEPA decision making. If samples are collected as described in Section 6.4.1, i.e., in stainless steel sleeves, all VOC analytes may be qualified as estimated or rejected using Region 9 data validation guidelines. If a laboratory that can handle Encore (or equivalent) sampling devices and utilize EPA Method 5035 cannot be found in close enough proximity to the site, an alternative may be to preserve the samples with sodium bisulfate in the field. Unlike addition of methanol, preservation with sodium bisulfate will not increase the detection limits. Samples preserved in the field with sodium bisulfate are ready for analysis by 5035 and have a holding time of 14 days. This issue should be resolved to ensure that VOC data are of sufficient quality for decision making by the Region. Please refer to the R9 document *Regional Interim Policy for Determination of Volatile Organic Compound (VOC) Concentrations in Soil and Solid Matrices* (EPA Memorandum, June 23, 1999) for additional discussion.

1B. An additional sample for moisture determination must accompany the VOC samples if the samples collected for VOC analyses are sent to a different laboratory than samples for other organic analyses

2. [Section 6.1.1, Surface Soil Sampling - Rationale and Sampling Locations] The first paragraph of Section 6.1.1 specifies sample collection at 19 locations. The third paragraph of the section indicates 20 sampling locations. This discrepancy should be resolved.

3A. [Section 6.3.2.1, Field Duplicates] Section 6.3.2.1 states that data obtained from field duplicate samples will provide an estimate of measurement error attributable to the data collection process. It is recommended that limits be set regarding acceptable variability of field duplicate samples.

3B. It is recommended that field duplicate samples be collected from areas where moderate levels of contamination may be expected. It is also recommended that the sample locations designated for field duplicate collection be identified in the FSP.

4A. [Section 6.3.2.3, Trip Blanks] Section 6.3.2.3 addresses the use of empty Summa canisters for trip blanks. This section should also indicate that trip blanks will accompany soil samples collected for VOC analysis.

4B. It is recommended that temperature blanks be included in each container shipped to the laboratory.

5. [Section 6.4.1, Surface Soil Sampling] It is recommended that the FSP describe sample homogenization for non-VOC analyses.

6. [Section 6.4.3, Soil Gas Sampling; Section 6.1.3, Soil Gas Sampling - Rationale and Sampling Locations; Table 6-10, Sample Collection Summary] Section 6.1.3 states that three samples will be collected along both the northwest and northeast boundaries. Section 6.4.3 states that soil gas samples will be collected at depths of 6 and 12 feet below ground surface (bgs) at each sampling location. Table 6-10 indicates that only six soil gas samples, plus a duplicate, will be collected. The number of soil gas samples to be collected should be clarified. If 12 samples will be collected, another field duplicate for soil gas analysis should be added.

7. [Figure 6-1, Proposed Sample Locations] It is recommended that sampling locations be labeled with sample numbers.

8. [Tables 6-2, 6-3, and 6-4: Target Compound List (TCL) and Reporting Limits (RLs) for CAM Metals in Soil, Semi-VOCs in Soils, and Pesticides and Polychlorinated Biphenyls in Soils, respectively] Tables 6-2, 6-3, and 6-4 indicate that some RLs are greater than the preliminary remediation goals (PRGs). The FSP or QAPP should discuss how data are evaluated when the RLs are greater than the PRGs.

9A. [Table 6-9, Sample Preservation, Holding times, and Container Requirements] Table 6-9 specifies a 14-day holding time for VOCs in soil using brass sleeves. Region 9 specifies a 48-hour holding time for samples collected in an Encore (or equivalent) sampling devise. Please refer to Comment 2, above for additional discussion of this topic.

9B. Table 6-9 specifies temperature control as the preservative and 14 days for the holding time for water samples targeted for VOC analysis. If water samples are not acidified to pH<2 with hydrochloric acid, the holding time is seven days.

10A. [Section 7.1.1.1, Key Personnel; Figure 7-1, Project Team Organization Chart] Section 7.1.1.1 identifies the key personnel for the project but does not describe their duties and responsibilities. Section 7.1.1.1 should be expanded to discuss specific roles and responsibilities of key personnel. The project quality assurance manager must be independent of the unit generating data.

10B. The organization chart should depict lines of authority and communication among project participants, including subcontractor relationships, e.g., analytical laboratory, drilling contractor, data validation contractor, etc.

11. [Section 7.1.4.1.1, Step 1: State the Problem; Table 7-1, Summary of Data Quality Objectives] Section 7.1.4.1.1 and Table 7-1 should be expanded to identify the planning team members, including the decision makers.

12. [Section 7.2.1, Sample Process Design] Section 7.2.1 cites Section 7.0 for number, types, locations, and analyses of samples. Section 7.0 does not contain this information. The citation should be corrected.

13. [Section 7.2.7.2, Laboratory Equipment] Section 7.2.7.2 states that calibration of laboratory equipment will be based on written procedures approved by laboratory management. The QAPP should specify acceptance criteria for initial and continuing calibration.

14. [Section 7.3, Assessment/Oversight] Section 7.3 should provide a description of how a performance evaluation (PE) sample will be entered into the sample stream and identify who is responsible for submission of the PE sample.

15. [Section 7.4.1, Validation and Verification Methods] Section 7.4.1 states that data validation will be performed by technical personnel from CDM, under the supervision of

the QA manager. It is not clear that the individuals performing data validation are independent of the group generating the data.

Technical information for this review was provided under ESAT Contract No. 68-W-01-028, Task Order B01, Technical Direction No. B0105079.

TECHNICAL DIRECTION NO. B0105086 Amendment 1

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE:** ~~3-18-02~~ 3-28-02

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Amendment 1: modify level of review for volatiles data to Tier 3 focusing on compounds of concern specified below.

Data Package Information **Project Information:**

Case# 11-BBCO-19.0 Data type RSK-175 EPA Site Manager Nancy Riveland-Har SDG# 02B-156, 166 & 190 Mail Code SFD-7-4 Case# 11-BBCO-19.0 Data type dioxane [ ] EPA-Lead Non-CLP [X] REAP EMAX
SDG# 02B-117 & 130
Case# 11-BCCO-15.0 Data type VO
SDG# 01K-004,017,027 & 01J-254 &260

Level of Review: Tier 3: PCE and its degradation products, freons, and aromatic compounds (BTEX). Tier 1A: all other data.

Deliverable	**Due date**
[X] Validation Reports	4-12-02

Pkg to ESAT: 3-20

Type	SDG	samples/matrix		Complete	Rec'd	Transmit
RSK-175	156,166 &190	5W,3W & 8W	4/9	4/10	4/10	
dioxane	117 & 130	6W & 5W	4/9		4/10	4/10
VO	004	4W	4/17	4/18	4/19	
	017	10W	5/8	5/9	5/13	
	027	6W	5/8	5/9	5/13	
	01J	5W	4/17	4/18	4/19	
	260	5W	5/6	5/9	5/9	

SFUND RECORDS CTR
1110-00346

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072795

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof DL
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: April 9, 2002

SUBJECT: Tier 1A Cover Memo for Omega Chem OU-2 Site, Case No. 11-BBCO-19.0, SDG Nos. 02B156, 02B166 and 02B190, Water Samples for Dissolved Gases by Method RSK-175.

A limited evaluation of the data package was performed to identify any key analytical issues/deficiencies affecting data quality. This evaluation approach is employed when in-depth data review is not required as indicated by the data user. During this limited evaluation, areas of concern were noted (see Lettered and Additional Comments).

The evaluation included: a review of the data package for completeness; review of the chain of custody forms (against laboratory reported information, for signatures, for sample condition upon receipt by the laboratory and for sample preservation); review of holding times; review of QC summaries; review of blanks for contamination; review of standards data; random check of reported results against raw data; random check of raw data for interference problems or system control problems (e.g. baseline anomalies, baseline drifts, etc.).

The following data quality issues should be noted:

A. Results denoted with an "L" qualifier are estimated and flagged "J" in Tier 1A Table 1A. Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Detected results for methane in samples GW102-MW8D-0116, GW102-MW8A-0040, GW102-MW1B-0080, GW102-MW3-0042, GW102-MW10-2009, GW102-MW5-0049 and GW102-MW9A-0032 are qualified as nondetected and estimated and flagged "U,J" in Tier 1A Table 1A due to laboratory method blank contamination.

Additional Comments:

Samples GW102-MW8D-0116, GW102-MW8A-0040, GW102-MW8A-1040, GW102-MW8B-0070, GW102-MW1B-0080, GW102-MW1A-0055, GW102-MW6-0042, GW102-MW10-0057, GW102-MW10-2009 and GW102-MW9B-0054 had a bubble ($\leq$ 6 mm) before extraction. Since the bubble is very small, no significant adverse effect on data quality is expected.

Matrix spike/matrix spike duplicate was not analyzed.

Tier 1A Table 1As are attached.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment.

SFUND RECORDS CTR
1110-00347

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072796

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: April 9, 2002

SUBJECT: Tier 1A Cover Memo for Omega Chem OU-2 Site, Case No. 11-BBCO-19.0, SDG Nos. 02B117 and 02B130, Water Samples for 1,4-Dioxane by SW-846 Method 8270C and Selective Ion Monitoring.

A limited evaluation of the data package was performed to identify any key analytical issues/deficiencies affecting data quality. This evaluation approach is employed when in-depth data review is not required as indicated by the data user. During this limited evaluation, areas of concern were noted (see Lettered and Additional Comments).

The evaluation included: a review of the data package for completeness; review of the chain of custody forms (against laboratory reported information, for signatures, for sample condition upon receipt by the laboratory and for sample preservation); review of holding times; review of QC summaries; review of blanks for contamination; review of standards data; random check of reported results against raw data; random check of raw data for interference problems or system control problems (e.g. baseline anomalies, baseline drifts, etc.).

The following data quality issues should be noted:

A. Results denoted with an "L" qualifier are estimated and flagged "J" in Tier 1A Table 1A. Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Detected results for 1,4-dioxane in samples GW102-OW3-0080 and GW102-OW5-0048 are qualified as nondetected and estimated and flagged "U,J" in Tier 1A Table 1A due to laboratory method blank contamination.

Additional Comments:

Sample GW102-OW1A-0080 was reanalyzed at a 564-fold dilution due to the high level of 1,4-dioxane. The 1,4-dioxane concentration from the diluted sample analysis is presented in Tier 1A Table 1A.

Tier 1A Table 1As are attached.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment.

SFUND RECORDS CTR
1110-00348

ICF CONSULTING

SFUND RECORDS CTR
88072797

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: April 17, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	11-BCCO-15.0
SDG NO.:	01K004
LABORATORY:	EMAX Laboratories, Inc. (EMAX)
ANALYSIS:	Volatiles
SAMPLES:	4 Water Samples
COLLECTION DATE:	October 31, 2001
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: ESAT File

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 11-BCCO-15.0 SDG No.: 01K004
Site: Omega Chem OU-2
Laboratory: EMAX Laboratories, Inc.
Reviewer: Denise McCaffrey, ESAT/LDC
Date: April 17, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	GW401-PP073-0087, GW401-PP074-0072, GW401-PP075-0048, and GW401-PP075-2005
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	SW-846 Method 8260B
Collection Date:	October 31, 2001
Sample Receipt Date:	November 1, 2001
Extraction Date:	Not Applicable
Analysis Date:	November 1, 2001

FIELD QC:

Trip Blanks (TB):	GW401-PP075-2005
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

MBLK1W:	GW401-PP073-0087, GW401-PP073-0087DL, GW401-PP074-0072, GE401-PP074-0072DL GW401-PP075-0048, and GW401-PP075-2005

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

SAMPLING ISSUES:

Detected results for chloroform are qualified as nondetected and estimated (U,J) due to contamination in trip blank GW401-PP075-2005.

Matrix spike/matrix spike duplicate (MS/MSD) analysis was not performed because no MS/MSD sample was designated in this sample delivery group (SDG).

DL - Dilution

ADDITIONAL COMMENTS:

Dichlorofluoromethane was not analyzed. This compound is included in the REAP DQI Table.

The REAP DQI Table specified that four surrogate spikes (Toluene-d8, BFB, 1,2-dichloroethane-d4, and dibromofluoromethane) are required. Only three surrogate spikes (Toluene-d8, BFB, and 1,2-dichloroethane-d4) were used by the laboratory. The accuracy of the analytes were assessed based on the same grouping of surrogates and internal standards used by the laboratory.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Data Quality Indicator (DQI) Table for *Volatile Organic Compounds (VOCs) by SW-846 Method 8260,* Appendix B, Attachment 2, Section J, Contract No. 68-R9-00-11, Regional Environmental Analytical Procurement (REAP);
- EPA SW-846 Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS),* Revision 2, December 1996;
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	YES	
FIELD BLANKS	NO	B
SURROGATES	NO	D
LABORATORY CONTROL SAMPLE/DUPLICATE	YES	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, E, F
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	YES	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to trip blank contamination, and are flagged "U,J" in Table 1A.

- Chloroform in samples GW401-PP073-0087, GW401-PP074-0072, and GW401-PP075-0048

Chloroform was found in trip blank GW401-PP075-2005 at a concentration of 0.65 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone and hexachlorobutadiene in all samples and the method blank

%Ds of 49.0% (biased high) and 32.8% (biased low) were observed for acetone and hexachlorobutadiene, respectively, in the continuing calibration performed on November 1, 2001. These values exceed the ±30.0% validation criterion.

The continuing calibration checks the instrument's performance daily.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to surrogate recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloroethane-d4}
- Freon 113 in samples GW401-PP0073-0087 and GW401-PP074-0072
- 1,1-Dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, trichlorofluoromethane, and methyl t-butyl ether in sample GW401-PP074-0072

Surrogate recoveries exceeded the QC limits are shown below for the samples listed above.

Sample	Surrogate	%Recovery	QC Limits
GW401-PP073-0087DL	1,2-Dichloroethane-d4	116	85-115
GW401-PP074-0072	1,2-Dichloroethane-d4	117	85-115

Detected results for affected analytes may be biased high. The samples were not re-analyzed.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

E. Sample GW401-PP073-0087 was analyzed at a 50-fold dilution due to the high levels of target analytes. The CRQLs listed for this sample in Table 1A have been multiplied by the dilution factor.

F. Sample GW401-PP073-0087 was analyzed at a further dilution of 100-fold due to the high level of freon 113. The result for freon 113 is reported from the 100-fold diluted sample in Table 1A; results for all other analytes are reported from the original analysis, performed at a 50-fold dilution.

Sample GW401-PP074-0072 was analyzed at a 25-fold dilution due to the high level of trichloroethene. The result for trichloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

SFUND RECORDS CTR
1110-00349

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072798

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof SL for DL
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: April 17, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	11-BCCO-15.0
SDG NO.:	01J254
LABORATORY:	EMAX Laboratories, Inc. (EMAX)
ANALYSIS:	Volatiles
SAMPLES:	5 Water Samples
COLLECTION DATE:	October 29, 2001
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: ESAT File

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 11-BCCO-15.0 SDG No.: 01J254
Site: Omega Chem OU-2
Laboratory: EMAX Laboratories, Inc.
Reviewer: Denise McCaffrey, ESAT/LDC
Date: April 17, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	GW401-PP063-0059, GW401-PP064-0061, GW401-PP065-0069, GW401-PP066-0065, and GW401-PP066-2002
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	SW-846 Method 8260B
Collection Date:	October 29, 2001
Sample Receipt Date:	October 30, 2001
Extraction Date:	Not Applicable
Analysis Date:	October 30 and 31, 2001

FIELD QC:

Trip Blanks (TB):	GW401-PP066-2002
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

MBLK1W:	GW401-PP063-0059, GW401-PP064-0061DL, GW401-PP065-0069DL, GW401-PP066-65, GW401-PP066-0065DL, and GW401-PP066-2002
MBLK2W:	GW401-PP064-0061, and GW401-PP065-0069

TABLES:

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review

DL - Dilution

SAMPLING ISSUES:

Detected results for chloroform and methylene chloride are qualified as nondetected and estimated (U,J) due to contamination in trip blank GW401-PP066-2002.

Matrix spike/matrix spike duplicate (MS/MSD) analysis was not performed because no MS/MSD sample was designated in this sample delivery group (SDG).

ADDITIONAL COMMENTS:

Dichlorofluoromethane was not analyzed. This compound is included in the REAP DQI Table.

The REAP DQI Table specified that four surrogate spikes (Toluene-d8, BFB, 1,2-dichloroethane-d4, and dibromofluoromethane) are required. Only three surrogate spikes (Toluene-d8, BFB, and 1,2-dichloroethane-d4) were used by the laboratory. The accuracy of the analytes were assessed based on the same grouping of surrogates and internal standards used by the laboratory.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Data Quality Indicator (DQI) Table for *Volatile Organic Compounds (VOCs) by SW-846 Method 8260,* Appendix B, Attachment 2, Section J, Contract No. 68-R9-00-11, Regional Environmental Analytical Procurement (REAP);
- EPA SW-846 Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS),* Revision 2, December 1996;
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
SURROGATES	NO	D
LABORATORY CONTROL SAMPLE/DUPLICATE	YES	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, E, F
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank and trip blank contamination, and are flagged "U,J" in Table 1A.

- Methylene chloride in samples GW401-PP063-0059 and GW401-PP066-0065
- Chloroform and toluene in samples GW401-PP063-0059, GW401-PP064-0061, GW401-PP065-0069, and GW401-PP066-0065

Chloroform and methylene chloride were found in trip blank GW401-PP066-2002 at concentrations of 0.64 μg/L and 0.54 μg/L, respectively. Toluene was found in method blank MBLK2W and trip blank GW401-PP066-2002 at concentrations of 0.36 μg/L and 0.28 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A laboratory method blank is laboratory reagent water analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Acetone in samples GW401-PP064-0061 and GW401-PP065-0069 and method blank MBLK2W
- Hexachlorobutadiene in all samples and method blanks

A %D of 37.3% (biased high) was observed for acetone in the continuing calibration performed on October 31, 2001. %Ds of 33.5% and 34.3% (biased low) were observed for hexachlorobutadiene in the continuing calibrations performed on October 30, 2001 and October 31, 2001, respectively. These values exceed the ±30.0% validation criterion.

The continuing calibration checks the instrument's performance daily.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to surrogate recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloroethane-d4}

- 1,1-Dichloroethane and cis-1,2-dichloroethene in samples GW401-PP065-0069 and GW401-PP066-0065
- 1,1-Dichloroethene, 1,2-dichloroethane, trans-1,2-dichloroethene, trichlorofluoromethane, and freon 113 in sample GW401-PP066-0065
- Chloroform in sample GW401-PP066-2002

Surrogate recoveries exceeded the QC limits are shown below for the samples listed above.

Sample	Surrogate	% Recovery	QC Limits
GW401-PP065-0069	1,2-Dichloroethane-d4	118	75-115
GW401-PP066-0065	1,2-Dichloroethane-d4	116	75-115
GW401-PP066-0065DL	1,2-Dichloroethane-d4	116	75-115
GW401-PP066-2002	1,2-Dichloroethane-d4	117	75-115

Detected results for affected analytes may be biased high. The samples were not re-analyzed.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

E. Samples GW401-PP065-0069 and GW401-PP066-0065 were analyzed at 10-fold dilutions due to the high level of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factors.

F. Sample GW401-PP064-0061was analyzed at a 10-fold dilution due to the high level of tetrachloroethene. The result for tetrachloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP065-0069 was analyzed at a further dilution of 100-fold due to the high level of 1,1-dichloroethene. The result for 1,1-dichloroethene is reported from the 100-fold diluted sample in Table 1A; results for all other analytes are reported from the original analysis, performed at a 10-fold dilution.

Sample GW401-PP066-0065 was analyzed at a further dilution of 50-fold due to the high levels of 1,1-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene. Results for 1,1-dichloroethene, cis-1,2-dichloroethene, trichloroethene, and tetrachloroethene are reported from the 50-fold diluted sample in Table 1A; results for all other analytes are reported from the original analysis, performed at a 10-fold dilution.

SFUND RECORDS CTR
1110-00351

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072800

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: May 6, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	11-BCCO-15.0
SDG NO.:	01J260
LABORATORY:	EMAX Laboratories, Inc. (EMAX)
ANALYSIS:	Volatiles
SAMPLES:	8 Water Samples
COLLECTION DATE:	October 30, 2001
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: ESAT File

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 11-BCCO-15.0 SDG No.: 01J260
Site: Omega Chem OU-2
Laboratory: EMAX Laboratories, Inc.
Reviewer: Denise McCaffrey, ESAT/LDC
Date: May 6, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	GW401-PP067-0046, GW401-PP068-0058, GW401-PP069-0060, GW401-PP069-1060, GW401-PP070-0093, GW401-PP071-0084, GW401-PP072-0088, and GW401-PP072-2003
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	SW-846 Method 8260B
Collection Date:	October 30, 2001
Sample Receipt Date:	October 31, 2001
Extraction Date:	Not Applicable
Analysis Date:	October 31 and November 1, 2001

FIELD QC:

Trip Blanks (TB):	GW401-PP072-2003
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	GW401-PP069-0060 and GW401-PP069-1060

METHOD BLANKS AND ASSOCIATED SAMPLES:

MBLK1W:	GW401-PP067-0046, GW401-PP068-0058, GW401-PP069-0060, GW401-PP069-1060, GW401-PP070-0093, GW401-PP071-0084DL, GW401-PP072-0088DL, and GW401-PP072-2003
MBLK2W:	GW401-PP067-0046DL, GW401-PP069-0060DL, GW401-PP069-1060DL, GW401-PP071-0084, and GW401-PP072-0088

TABLES:

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review

DL - Dilution

SAMPLING ISSUES:

Detected results for chloroform are qualified as nondetected and estimated (U,J) due to contamination in trip blank GW401-PP072-2003.

Matrix spike/matrix spike duplicate (MS/MSD) analysis was not performed because no MS/MSD sample was designated in this sample delivery group (SDG).

ADDITIONAL COMMENTS:

Dichlorofluoromethane was not analyzed. This compound is included in the REAP DQI Table.

The REAP DQI Table specified that four surrogate spikes (Toluene-d8, BFB, 1,2-dichloroethane-d4, and dibromofluoromethane) are required. Only three surrogate spikes (Toluene-d8, BFB, and 1,2-dichloroethane-d4) were used by the laboratory. The accuracy of the analytes were assessed based on the same grouping of surrogates and internal standards used by the laboratory.

Tentatively identified compounds (TICs) were not reported by the laboratory.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Data Quality Indicator (DQI) Table for *Volatile Organic Compounds (VOCs) by SW-846 Method 8260,* Appendix B, Attachment 2, Section J, Contract No. 68-R9-00-11, Regional Environmental Analytical Procurement (REAP);
- EPA SW-846 Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS),* Revision 2, December 1996;
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
SURROGATES	NO	D
LABORATORY CONTROL SAMPLE/DUPLICATE	YES	
MATRIX SPIKE/DUPLICATE	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	NO	G
COMPOUND QUANTITATION	YES	A, E, F
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	YES	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank and trip blank contamination, and are flagged "U,J" in Table 1A.

- Chloroform in samples GW401-PP067-0046, GW401-PP068-0058, GW401-PP069-0060, GW401-PP069-1060, GW401-PP071-0084, and GW401-PP072-0088

- Toluene in samples GW401-PP067-0046, GW401-PP068-0058, GW401-PP069-0060, GW401-PP069-1060, GW401-PP071-0084, GW401-PP072-0088, and GW401-PP072-2003

Chloroform was found in trip blank GW401-PP072-2003 at a concentration of 0.67 μg/L. Toluene was found in method blanks MBLK1W and MBLK2W at concentrations of 0.36 μg/L and 0.33 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A laboratory method blank is laboratory reagent water analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Acetone in samples GW401-PP067-0046, GW401-PP068-0058, GW401-PP069-0060, GW401-PP069-1060, GW401-PP070-0093, GW401-PP072-2003, and method blank MBLK1W

- Hexachlorobutadiene in all samples and method blanks

A %D of 37.3% (biased high) was observed for acetone in the continuing calibration performed on October 31, 2001. %Ds of 34.3% and 36.8% (biased low) were observed for hexachlorobutadiene in the continuing calibrations performed on October 31, 2001 and November 1, 2001, respectively. These values exceed the ±30.0% validation criterion.

The continuing calibration checks the instrument's performance daily.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to surrogate recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloroethane-d4}

- 1,1-Dichloroethane in samples GW401-PP068-0058, GW401-PP069-0060, and GW401-PP069-1060
- 1,1-Dichloroethene in samples GW401-PP067-0046, GW401-PP068-0058, and GW401-PP070-0093
- trans-1,2-Dichloroethene, vinyl chloride, and methyl t-butyl ether in samples GW401-PP069-0060 and GW401-PP069-1060
- Trichlorofluoromethane and freon 113 in samples GW401-PP068-0058, GW401-PP069-0060, GW401-PP069-1060, and GW401-PP072-0088
- Chloroform in sample GW401-PP072-2003

Surrogate recoveries exceeded the QC limits are shown below for the samples listed above.

Sample	Surrogate	% Recovery	QC Limits
GW401-PP067-0046	1,2-Dichloroethane-d4	116	85-115
GW401-PP068-0058	1,2-Dichloroethane-d4	118	85-115
GW401-PP069-0060	1,2-Dichloroethane-d4	116	85-115
GW401-PP069-1060	1,2-Dichloroethane-d4	119	85-115
GW401-PP070-0093	1,2-Dichloroethane-d4	118	85-115
GW401-PP072-0088DL	1,2-Dichloroethane-d4	122	85-115
GW401-PP072-2003	1,2-Dichloroethane-d4	117	85-115

Detected results for affected analytes may be biased high. The samples were not re-analyzed.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

E. Samples GW401-PP067-0046, GW401-PP068-0058, GW401-PP069-0060, and GW401-PP069-1060 were analyzed at 5-fold dilutions due to the high level of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factors.

F. Sample GW401-PP071-0084 was analyzed at a 25-fold dilution due to the high level of freon 113. The result for freon 113 is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP072-0088 was analyzed at a 25-fold dilution due to the high levels of trichlorofluoromethane, trichloroethene, tetrachloroethene, and freon 113. Results for trichlorofluoromethane, trichloroethene, tetrachloroethene, and freon 113 are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP067-0046 was analyzed at a further dilution of 50-fold due to the high level of tetrachloroethene. The result for tetrachloroethene is reported from the 50-fold diluted sample in Table 1A; results for all other analytes are reported from the original analysis, performed at a 5-fold dilution.

Samples GW401-PP069-0060 and GW401-PP069-1060 were analyzed at further dilutions of 50-fold due to the high levels of 1,1-dichloroethene and cis-1,2-dichloroethene. Results for 1,1-dichloroethene and cis-1,2-dichloroethene are reported from the 50-fold diluted samples in Table 1A; results for all other analytes are reported from the original analyses, performed at a 5-fold dilutions.

G. Acetone was detected in the sample GW401-PP072-0088 at a concentration of 26 μg/L. However, the presence of acetone cannot be verified by the data reviewer because of the high concentration of freon 113 (240 μg/L) in the sample.

SFUND RECORDS CTR
1110-00352

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072801

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: May 8, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	11-BCCO-15.0
SDG NO.:	01K017
LABORATORY:	EMAX Laboratories, Inc. (EMAX)
ANALYSIS:	Volatiles
SAMPLES:	10 Water Samples
COLLECTION DATE:	November 1, 2001
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: ESAT File

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 11-BCCO-15.0 SDG No.: 01K017
Site: Omega Chem OU-2
Laboratory: EMAX Laboratories, Inc.
Reviewer: Denise McCaffrey, ESAT/LDC
Date: May 8, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	GW401-PP076-0056, GW401-PP077-0060, GW401-PP078-0081, GW401-PP079-0088, GW401-PP079-1088, GW401-PP081-4006, GW401-PP081-0071, GW401-PP080-0071, GW401-PP0812-2006, and GW401-PP082-0080
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	SW-846 Method 8260B
Collection Date:	November 1, 2001
Sample Receipt Date:	November 2, 2001
Extraction Date:	Not Applicable
Analysis Date:	November 3 and 4, 2001

FIELD QC:

Trip Blanks (TB):	GW401-PP082-2006
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	GW401-PP081-4006
Background Samples (BG):	Not Provided
Field Duplicates (D1):	GW401-PP079-0088 and GW401-PP079-1088

METHOD BLANKS AND ASSOCIATED SAMPLES:

MBLK1W:	GW401-PP076-0056, GW401-PP077-0060, GW401-PP078-0081, GW401-PP079-0088, GW401-PP079-1088, GW401-PP080-0071, and GW401-0082-2006
MBLK2W:	GW401-PP078-0081DL, GW401-PP078-0081DL2, GW401-PP079-0088DL, GW401-PP081-0071, GW401-PP082-0080
MBLK3W:	GW401-PP079-1088DL and GW401-PP081-4006

TABLES:

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review

DL - Dilution

SAMPLING ISSUES:

Detected results for chloroform are qualified as nondetected and estimated (U,J) due to contamination in equipment blank GW401-PP081-4006 and trip blank GW401-PP082-2006.

Although tetrachloroethene was detected at a concentration of 0.21 μg/L in trip blank GW401-PP082-2006, no data are qualified because tetrachloroethene was either not detected in the associated samples or was detected at more than 5 times the amount in the trip blank.

Matrix spike/matrix spike duplicate (MS/MSD) analysis was not performed because no MS/MSD sample was designated in this sample delivery group (SDG).

ADDITIONAL COMMENTS:

Dichlorofluoromethane was not analyzed. This compound is included in the REAP DQI Table.

The REAP DQI Table specifies that four surrogate spikes (Toluene-d8, BFB, 1,2-dichloroethane-d4, and dibromofluoromethane) are required. Only three surrogate spikes (Toluene-d8, BFB, and 1,2-dichloroethane-d4) were used by the laboratory. The accuracy of the analyses were assessed based on the same grouping of surrogates and internal standards used by the laboratory.

Tentatively identified compounds (TICs) were not reported by the laboratory.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Data Quality Indicator (DQI) Table for *Volatile Organic Compounds (VOCs) by SW-846 Method 8260,* Appendix B, Attachment 2, Section J, Contract No. 68-R9-00-11, Regional Environmental Analytical Procurement (REAP);
- EPA SW-846 Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS),* Revision 2, December 1996;
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C, D
LABORATORY BLANKS	YES	
FIELD BLANKS	NO	B
SURROGATES	NO	E
LABORATORY CONTROL SAMPLE/DUPLICATE	YES	
MATRIX SPIKE/DUPLICATE	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	NO	H
COMPOUND QUANTITATION	YES	A, G
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	F

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank and field blank contamination, and are flagged "U,J" in Table 1A.

- Chloroform in samples GW401-PP076-0056, GW401-PP077-0060, GW401-PP078-0081, GW401-PP079-0088, and GW401-PP079-1088

Chloroform was found in equipment blank GW401-PP081-4006 and trip blank GW401-PP082-2006 at concentrations of 0.53 μg/L and 0.64 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone in sample GW401-PP081-4006 and method blank MBLK3W

An average RRF of 0.048 was observed for acetone in the continuing calibration performed on November 4, 2001. This value is below the 0.05 validation criterion.

Detected results for the analyte listed above should be considered as the minimum values at which this analyte is present in the samples. Where the results are nondetected, false negatives may exist.

The relative response factor evaluates instrument sensitivity.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to a large percent difference (%D) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone in samples GW401-PP076-0056, GW401-PP077-0060, GW401-PP078-0081, GW401-PP079-0088, GW401-PP079-1088, GW401-PP080-0071, GW401-PP082-2006, and method blank MBLK1W
- Hexachlorobutadiene in all samples and method blanks

A %D of 31.4% (biased high) was observed for acetone in the continuing calibration performed on November 2, 2001. %Ds of 31.4%, 38.5%, and 33.8% (biased low) were observed for hexachlorobutadiene in the continuing calibrations performed on November 2, 3, and 4, 2001, respectively. These values exceed the ±30.0% validation criterion.

The continuing calibration checks the instrument's performance daily.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to surrogate recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloroethane-d4}
- 1,1-Dichloroethene, trichlorofluoromethane, and freon 113 in samples GW401-PP077-0060, GW401-PP078-0081, GW401-PP079-0088, and GW401-PP079-1088
- cis-1,2-Dichloroethene in samples GW401-PP077-0060 and GW401-PP078-0081
- Chloroform in sample GW401-PP082-2006

Surrogate recoveries exceeded the QC limits are shown below for the samples listed above.

Sample	Surrogate	% Recovery	QC Limits
GW401-PP077-0060	1,2-Dichloroethane-d4	119	85-115
GW401-PP078-0081	1,2-Dichloroethane-d4	119	85-115
GW401-PP078-0081DL2	1,2-Dichloroethane-d4	121	85-115
GW401-PP079-0088	1,2-Dichloroethane-d4	119	85-115
GW401-PP082-4006	1,2-Dichloroethane-d4	123	85-115

Detected results for affected analytes may be biased high. The samples were not re-analyzed.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

F. In the analysis of the field duplicate pairs, the following outliers were obtained for the analytes listed below.

	GW401-PP079-0088 (D1)	GW401-PP079-1088 (D1)	
Analyte	Conc., μg/L	Conc., μg/L	RPD (<25%)
1,1-Dichloroethene	4.3	12	94
Benzene	0.24L	1U	N/A
Trichlorofluoromethane	0.66L	0.25L	N/A
Acetone	7.5L	3L	N/A
Trichloroethene	240	580	83
Tetrachloroethene	8.8	6.1	36
Freon 113	2.9	1.8	47
Methylene chloride	0.21L	1U	N/A

A relative percent difference (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample but is either below the CRQL or is nondetected (U) at the CRQL in the associated field duplicate sample, or when an analyte is detected below the CRQL in both field duplicate samples. The effect on data quality is not known.

RPDs of 94%, 83%, 36%, and 47% were obtained for 1,1-dichloroethene, trichloroethene, tetrachloroethene, and freon 113, respectively, in the analysis of field duplicate samples GW401-PP079-0088 and GW401-PP079-1088. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix or poor sampling or analysis technique.

G. Sample GW401-PP078-0081was analyzed at a 10-fold dilution due to the high levels of 1,1-dichloroethene, trichlorofluoromethane, acetone, and trichloroethene. A further dilution of 500-fold was analyzed due to the high levels of tetrachloroethene and freon 113. Results for 1,1-dichloroethene, trichlorofluoromethane, acetone, trichloroethene, tetrachloroethene, and freon 113 are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP079-0088 was analyzed at a 10-fold dilution due to the high level of trichloroethene. The result for trichloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP079-1088 was analyzed at a 25-fold dilution due to the high level of trichloroethene. The result for trichloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

H. Acetone was detected in the sample GW401-PP078-0081 at a concentration of 130 μg/L. However, the presence of acetone cannot be verified by the data reviewer because of the high concentration of freon 113 (1000 μg/L) in the sample.

SFUND RECORDS CTR
1110-00353

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072802

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105086 Amendment 1

DATE: May 8, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	11-BCCO-15.0
SDG NO.:	01K027
LABORATORY:	EMAX Laboratories, Inc. (EMAX)
ANALYSIS:	Volatiles
SAMPLES:	4 Water Samples
COLLECTION DATE:	November 2, 2001
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: ESAT File

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.:	11-BCCO-15.0 SDG No.: 01K027
Site:	Omega Chem OU-2
Laboratory:	EMAX Laboratories, Inc.
Reviewer:	Denise McCaffrey, ESAT/LDC
Date:	May 8, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	GW401-PP083-0082, GW401-PP084-0047, GW401-PP085-0038, and GW401-PP085-2007
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	SW-846 Method 8260B
Collection Date:	November 2, 2001
Sample Receipt Date:	November 3, 2001
Extraction Date:	Not Applicable
Analysis Date:	November 3 and 4, 2001

FIELD QC:

Trip Blanks (TB):	GW401-PP085-2007
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

MBLK1W:	GW401-PP083-0082, GW401-PP084-0047, GW401-PP085-0038, and GW401-PP085-2007
MBLK2W:	GW401-PP083-0082DL, GW401-PP083-0082DLMS, GW401-PP083-0082DLMSD, GW401-PP084-0047DL, and GW401-PP085-0038DL

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

SAMPLING ISSUES:

Detected results for chloroform are qualified as nondetected and estimated (U,J) due to contamination in trip blank GW401-PP085-2007.

MS - Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

ADDITIONAL COMMENTS:

Sample GW401-PP083-0082 had low internal standard areas in the original, undiluted analysis. The sample was reanalyzed at a dilution due to the high concentration of several target analytes. The diluted analysis had all internal standard areas within QC limits. Results from the diluted analysis only are presented in Table 1A.

Dichlorofluoromethane was not analyzed. This compound is included in the REAP DQI Table.

The REAP DQI Table specifies that four surrogate spikes (Toluene-d8, BFB, 1,2-dichloroethane-d4, and dibromofluoromethane) are required. Only three surrogate spikes (Toluene-d8, BFB, and 1,2-dichloroethane-d4) were used by the laboratory. The accuracy of the analyses were assessed based on the same grouping of surrogates and internal standards used by the laboratory.

Tentatively identified compounds (TICs) were not reported by the laboratory.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Data Quality Indicator (DQI) Table for *Volatile Organic Compounds (VOCs) by SW-846 Method 8260,* Appendix B, Attachment 2, Section J, Contract No. 68-R9-00-11, Regional Environmental Analytical Procurement (REAP);
- EPA SW-846 Method 8260B, *Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS),* Revision 2, December 1996;
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C, D
LABORATORY BLANKS	YES	
FIELD BLANKS	NO	B
SURROGATES	NO	E
LABORATORY CONTROL SAMPLE/DUPLICATE	YES	
MATRIX SPIKE/DUPLICATE	YES	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	NO	H
COMPOUND QUANTITATION	YES	A, F, G
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to trip blank contamination, and are flagged "U,J" in Table 1A.

- Chloroform in samples GW401-PP084-0047 and GW401-PP085-0038

Chloroform was found in trip blank GW401-PP085-2007 at a concentration of 0.64 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone in sample GW401-PP083-0082 and method blank MBLK2W

An average RRF of 0.048 was observed for acetone in the continuing calibration performed on November 4, 2001. This value is below the 0.05 validation criterion.

Detected results for the analyte listed above should be considered as the minimum values at which this analyte is present in the samples. Where the results are nondetected, false negatives may exist.

The relative response factor evaluates instrument sensitivity.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone in samples GW401-PP084-0047, GW401-PP085-0038, GW401-PP085-2007, and method blank MBLK1W

- Hexachlorobutadiene and 1,2,3-trichlorobenzene in sample GW401-PP083-0082 and method blank MBLK2W

A %D of 51.0% (biased high) was observed for acetone in the continuing calibration performed on November 3, 2001. %Ds of 33.8% and 40.8% (biased low) were observed for hexachlorobutadiene and 1,2,3-trichlorobenzene, respectively, in the continuing calibration performed on November 4, 2001, respectively. These values exceed the ±30.0% validation criterion.

The continuing calibration checks the instrument's performance daily.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to surrogate recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloroethane-d4}
- 1,1-Dichloroethane, cis-1,2-dichloroethene, and trans-1,2-dichloroethene in sample GW401-PP084-0047
- cis-1,2-Dichloroethene and freon 113 in sample GW401-PP085-0038
- Chloroform in sample GW401-PP085-2007

Surrogate recoveries exceeded the QC limits are shown below for the samples listed above.

Sample	Surrogate	% Recovery	QC Limits
GW401-PP084-0047	1,2-Dichloroethane-d4	119	85-115
GW401-PP085-0038	1,2-Dichloroethane-d4	125	85-115
GW401-PP085-2007	1,2-Dichloroethane-d4	123	85-115

Detected results for affected analytes may be biased high. The samples were not re-analyzed.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

F. Samples GW401-PP083-0082 was analyzed at a 50-fold dilution due to the high levels of target analytes. The CRQLs listed for this sample in Table 1A have been multiplied by the dilution factor.

G. Sample GW401-PP084-0047 was analyzed at a 50-fold dilution due to the high levels of 1,1-dichloroethene, trichlorofluoromethane, trichloroethene, tetrachloroethene, and freon 113. Results for 1,1-dichloroethene, trichlorofluoromethane, trichloroethene, tetrachloroethene, and freon 113 are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample GW401-PP085-0038 was analyzed at a 5-fold dilution due to the high level of tetrachloroethene. The result for tetrachloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

H. Acetone was detected in the sample GW401-PP084-0047 at a concentration of 53 μg/L. However, the presence of acetone cannot be verified by the data reviewer because of the high concentration of freon 113 (550 μg/L) in the sample.

TECHNICAL DIRECTION NO. B0105091

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE:** 4-1-02

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package Information **Project Information:**
Case# 30205 Data type VO EPA Site Manager Nancy Riveland-Har SDG# Y0DZ0, E00 & E21 Mail Code SFD-7-4
[ ] EPA-Lead Non-CLP [ ] REAP EMAX

Level of Review: Tier 3 of volatiles, focusing on PCE and its degradation products, freons, and BTEX. No review of other data.

Deliverable	**Due date**
[X] Validation Reports	4-26-02

Pkgs to ESAT: 4/1
Y0DZ0: 18W; E00:18W; E21:9W

	Complete:	Rec:	Transmit:
DZ0	5/13	5/14	5/14
E00	5/20	5/22	5/23
E21	5/23	5/28	5/28

SFUND RECORDS CTR
1110-00354

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072803

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105091

DATE: May 13, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	30205
SDG NO.:	Y0DZ0
LABORATORY:	A4 Scientific, Inc. (A4)
ANALYSIS:	Volatiles
SAMPLES:	18 Water Samples
COLLECTION DATE:	February 13, 14, 15, and 18, 2002
REVIEWER:	Santiago Lee, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment
cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105091-1431/30205/Y0DZ0V.wpd

Data Validation Report

Case No.: 30205 SDG No.: Y0DZ0
Site: Omega Chem OU-2
Laboratory: A4 Scientific, Inc. (A4)
Reviewer: Santiago Lee, ESAT/LDC
Date: May 13, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0DZ0 through Y0E06 and Y0E28
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	February 13, 14, 15, and 18, 2002
Sample Receipt Date:	February 15, 16, and 19, 2002
Extraction Date:	Not Applicable
Analysis Date:	February 21, 2002 through March 2, 2002

FIELD QC:

Trip Blanks (TB):	Y0DZ5, Y0DZ8, Y0E03, and Y0E04
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0E01
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0DZ6 and Y0DZ7

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK75:	Y0E28, Y0DZ1, Y0DZ9, Y0E03, Y0E04, Y0DZ1DL, Y0DZ8, Y0E01, and Y0DZ9DL
VBLK76:	Y0DZ5, Y0DZ3DL, Y0DZ4DL, and Y0E06DL
VBLK77:	Y0DZ7DL, Y0DZ0DL, Y0DZ6DL, Y0E00DL, Y0DZ2DL, Y0DZ0, and Y0DZ2
VBLK78:	Y0E05DL, Y0E05, Y0E00, Y0DZ3, and Y0DZ6
VBLK82:	Y0DZ4 and Y0DZ4MS
VBLK83:	Y0E02, Y0E02DL, Y0DZ4MSD, and Y0E06
VBLK84:	Y0DZ7 and VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

MS - Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for methylene chloride, toluene, and chloroform in several samples are qualified as nondetected and estimated (U,J) due to contamination in the method blanks and trip blank.

2) Detected results and quantitation limits for all target analytes in some samples are qualified as estimated (J) due to holding time problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

4) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside QC limits.

SAMPLING ISSUES:

Detected results for chloroform in some samples are qualified as nondetected and estimated (U,J) due to contamination in trip blank Y0E03.

ADDITIONAL COMMENTS:

For sample Y0E00, area of the internal standard chlorobenzene-d5 (119796) exceeded the upper QC limit of 119642. Analytes were not qualified because the upper limit was exceeded by only 0.13%.

Tentatively identified compounds (TICs) detected in the samples are reported on the Form 1LCFs. Other than laboratory artifacts/contaminants (retention times = 9.0 and 14.1 minutes), TICs were detected in samples Y0DZ0 through Y0DZ4, Y0DZ6, Y0DZ8 through Y0E00, Y0E02, Y0E03, Y0E05 and Y0E28 (see attached Form 1LCFs).

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*,
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	NO	C
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	D, E
CONTINUING CALIBRATIONS	NO	D, F
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS (DMCs)	NO	G
MATRIX SPIKE/DUPLICATES	NO	H
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	NO	L
COMPOUND QUANTITATION	YES	A, J, K
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	I

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank or trip blank contamination, and are flagged "U,J" in Table 1A.

- Methylene Chloride in samples Y0DZ2, Y0DZ7, Y0E02, Y0E06, and Y0DZ4MSD and storage blank VHBLK01
- Toluene in sample Y0E03
- Chloroform in samples Y0DZ3, Y0DZ4, Y0DZ6, Y0E02, Y0DZ4MS, and Y0DZ4MSD

Methylene chloride was found in method blanks VBLK77, VBLK83, and VBLK84 at concentrations of 0.3 μg/L, 0.6 μg/L, and 0.2 μg/L, respectively. Toluene was found in method blank VBLK75 at a concentration of 0.3 μg/L. Chloroform was found in the trip blank Y0E03 at a concentration of 3 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although not detected in the associated method blanks, methylene chloride has been commonly found in the field and in many laboratories. The user should note that the methylene chloride found in samples Y0DZ3 (0.2 μg/L), Y0DZ4 (6 μg/L at 10-fold dilution), Y0E05 (0.3 μg/L), and Y0DZ4MS (12 μg/L at 10-fold dilution) may be an artifact.

Although not detected in the associated trip blanks, chloroform has been commonly found in the field. The user should note that the chloroform found in samples Y0E05 (2 μg/L) and Y0E06 (11 μg/L) may be an artifact.

Although 1,2,3-trichlorobenzene was found in method blanks VBLK83 (0.5 μg/L) and VBLK84 (0.3 μg/L), no data are qualified because 1,2,3-trichlorobenzene was not found in any of the samples associated with these method blanks.

Although acetone was found in the trip blank Y0DZ5 at a concentration of 7 μg/L, no data are qualified because acetone was not found in the samples associated with this trip blank or was detected at concentrations exceeded ten times the amount in the trip blank.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to missed technical holding times, and are flagged "J" in Table 1A.

- All analytes except tetrachloroethene in samples Y0DZ7
- All analytes in samples Y0E02 and Y0DZ4MSD

These water analyses exceeded the 14-day 40 CFR 136 (Clean Water Act) technical holding times as shown below.

Sample	Date Collected	Date Analyzed	# of Days Exceeded
Y0DZ7	02/15/02	03/02/02	3
Y0E02	02/15/02	03/01/02	2
Y0E02DL	02/15/02	03/01/02	2
Y0DZ4MSD	02/15/02	03/01/02	2

Detected results for the samples listed above may be biased low. Where the results are nondetected, false negatives may exist.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, methyl acetate, and 2-butanone in all samples, storage blank, and method blanks

- 2-Hexanone in samples Y0DZ5, Y0E02, Y0E06 and Y0DZ4MSD and method blanks VBLK76 and VBLK83

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on January 31, 2002. RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on February 23, 2002 and March 1, 2002 (Table 2).

Detected results for the analytes listed above should be considered as the minimum values at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (Table 2). The quantitation of the analytes associated with these DMCs may have been affected by the low RRFs. See Comment G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The relative response factor evaluates instrument sensitivity and is used in the quantitation of the target analytes.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent relative standard deviations (RSDs) in the initial calibration, and are flagged "J" in Table 1A.

- Acetone and methylene chloride in all samples, storage blank, and method blanks

Percent RSDs exceeded the ≤30.0% validation criterion for the analytes listed above in the initial calibration performed on January 31, 2002 (Table 2).

The DMC 2-hexanone-d5 also had %RSD which exceeded the ≤30.0% validation criterion in the initial calibration (Table 2). The quantitation of the analytes associated with this DMC may have been affected by the high %RSD. See Comment G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

F. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, chloromethane, methylene chloride, 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene in samples Y0E28, Y0DZ1, Y0DZ9, Y0E03, Y0E04, Y0DZ8, and Y0E01 and method blank VBLK75

- Methylene chloride in sample Y0DZ5 and method blank VBLK76

- Methylcyclohexane, isopropylbenzene, and 1,2,4-trichlorobenzene in samples Y0DZ0 and Y0DZ2 and method blank VBLK77

- Cyclohexane, methylcyclohexane, toluene, ethylbenzene, xylene (total), styrene, isopropylbenzene, 1,2,3-trichlorobenzene, and 1,2,4-trichlorobenzene in samples Y0E05, Y0E00, Y0DZ3, and Y0DZ6, and method blank VBLK78

- 1,2,3-Trichlorobenzene in samples Y0DZ4 and Y0DZ4MS and method blank VBLK82

Percent differences exceeded the ±30.0% validation criterion for the analytes listed above in the continuing calibrations performed on February 21, 2002, February 23, 2002 through February 25, 2002, and February 28, 2002 (Table 2).

The DMCs chloroethane-d5, 2-butanone-d5, 2-hexanone-d5, and bromoform-d also had %Ds which exceeded the ±30.0% validation criterion in the continuing calibrations (Table 2). The quantitation of the analytes associated with these DMCs may have been affected by the high %Ds. See Comment G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

G. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recovery outside QC limits, and are flagged "J" in Table 1A.

{1,2-Dichloropropane-d6, toluene-d8, and trans-1,3-Dichloropropene-d4}
- Cyclohexane, methylcyclohexane, 1,2-dichloropropane, bromodichloromethane, trichloroethene, toluene, tetrachloroethene, ethylbenzene, xylenes (total), styrene, isopropylbenzene, cis-1,3-dichloropropene, trans-1,3-dichloropropene, and 1,1,2-trichloroethane in sample Y0DZ5

{1,1-Dichloroethene-d2}
- trans-1,2-Dichloroethene in sample Y0DZ6
- cis-1,2-Dichloroethene in samples Y0E05 and Y0E06

{Chloroform-d}
- 1,1-Dichloroethane and chloroform in sample Y0E00

Specific DMC recoveries which were outside the QC limits for the target analytes listed above are shown below.

Sample	DMC	%Recovery	QC Limits
Y0DZ5	1,2-Dichloropropane-d6	82	(84-123)
	Toluene-d8	76	(77-120)
	trans-1,3-Dichloropropene-d4	78	(80-128)
Y0E05	1,1-Dichloroethene-d2	240	(65-130)
Y0DZ6	1,1-Dichloroethene-d2	1300	(65-130)
Y0E06	1,1-Dichloroethene-d2	280	(65-130)
Y0E00	Chloroform-d	128	(80-123)

Detected results for affected analytes in samples Y0E05, Y0DZ6, Y0E06, and Y0E00 may be biased high; affected analytes in sample Y0DZ5 may be biased low. Where the results are nondetected, false negatives may exist. Samples were not reanalyzed.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

H. The matrix spike and matrix spike duplicate recoveries and relative percent difference (RPD) for 1,1-dichloroethene (1,1-DCE) and trichloroethene (TCE) did not meet the criteria for accuracy and precision specified in the SOW. Since the sample concentrations (1600 μg/L and 270 μg/L, respectively) are significantly higher than the spike concentration of 50 μg/L, the recoveries and RPDs are not meaningful.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and analysis.

I. In the analysis of the field duplicate pair, the following outliers were obtained for the analytes listed below.

Analyte	Y0DZ6 (D1) Conc. μg/L	Y0DZ7 (D1) Conc. μg/L	RPD (<25%)
Trichlorofluoromethane	300	34	159
1,1-Dichloroethene	350	130	92
1,1,2-Trichloro-1,2,2-trifluoroethane	1000	34	193
Acetone	310	50U	N/A
Carbon Disulfide	0.50U	2.2L	N/A
trans-1,2-Dichloroethene	0.22L	5.0U	N/A
1,1-Dichloroethane	1.5	5.0U	N/A
1,1,1-Trichloroethane	2.0	5.0U	N/A
Trichloroethene	130	97	29
Tetrachloroethene	630	350	57

A relative percent difference (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample but is nondetected (U) at the CRQL in the associated field duplicate sample, or when an analyte is detected below the CRQL in both field duplicate samples. The effect on the data quality is not known.

RPDs of 159%, 92%, 193%, 29%, and 57% were obtained for trichlorofluoromethane, 1,1-DCE, 1,1,2-trichloro-1,2,2-trifluoroethane, TCE, and tetrachloroethene (PCE), respectively, in the analysis of field duplicate samples Y0DZ6 and Y0DZ7. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix or poor sampling or laboratory technique.

J. Samples Y0DZ2, Y0DZ4, Y0DZ4MS, Y0DZ4MSD, and Y0DZ7 were analyzed at 100-fold, 10-fold, 10-fold, 10-fold, and 10-fold dilutions, respectively, due to high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factor.

K. Samples Y0DZ0, Y0DZ1, Y0DZ2 and Y0DZ7 were analyzed at dilutions due to the high levels of PCE. Results for PCE are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0DZ3 was analyzed at dilution due to the high levels of trichlorofluoromethane, 1,1-DCE, 1,1,2-trichloro-1,2,2-trifluoroethane, methyl tert-butyl ether (MTBE), and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Samples Y0DZ4 and Y0E05 were analyzed at dilutions due to the high levels of trichlorofluoromethane, 1,1-DCE, 1,1,2-trichloro-1,2,2-trifluoroethane, TCE, and PCE. Results for these analytes are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0DZ6 was analyzed at dilution due to the high levels of trichlorofluoromethane, 1,1-DCE, acetone, 1,1,2-trichloro-1,2,2-trifluoroethane, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0DZ9 was analyzed at dilution due to the high level of acetone. The result for acetone is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E00 was analyzed at dilution due to the high levels of trichlorofluoromethane, 1,1-DCE, 1,1,2-trichloro-1,2,2-trifluoroethane, chloroform, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E02 was analyzed at dilution due to the high levels of trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, cis-1,2-DCE, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E06 was analyzed at dilution due to the high levels of 1,1-DCE, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

L Acetone was reported in samples Y0DZ3 (64 μg/L), Y0DZ4 (110 μg/L), Y0DZ4MS (83 μg/L), Y0DZ4MSD (35 μg/L), Y0DZ6 (310 μg/L), Y0E00 (60 μg/L), Y0E02 (23 μg/L), and Y0E05 (15 μg/L). However, the presence of acetone cannot be verified by the data reviewer because of the high concentrations of Freon 113 (660 μg/L, 500 μg/L, 400 μg/L, 79 μg/L, 1000 μg/L, 18 μg/L, 140 μg/L, and 18 μg/L, respectively) in the samples.

SFUND RECORDS CTR
1110-00355

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072804

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105091

DATE: May 20, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	30205
SDG NO.:	Y0E00
LABORATORY:	A4 Scientific, Inc. (A4)
ANALYSIS:	Volatiles
SAMPLES:	14 Water Samples
COLLECTION DATE:	February 19, 20, 21, and 22, 2002
REVIEWER:	Santiago Lee, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment
cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105091-1464/30205/Y0E00V.wpd

Data Validation Report

Case No.:	30205 SDG No.: Y0E00
Site:	Omega Chem OU-2
Laboratory:	A4 Scientific, Inc. (A4)
Reviewer:	Santiago Lee, ESAT/LDC
Date:	May 20, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0E07 through Y0E20
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	February 19, 20, 21, and 22, 2002
Sample Receipt Date:	February 20, 21, 22, and 23, 2002
Extraction Date:	Not Applicable
Analysis Date:	March 2, 2002 through March 7, 2002

FIELD QC:

Trip Blanks (TB):	Y0E10, Y0E14, Y0E17, and Y0E20
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0E08 and Y0E09
Field Duplicates (D2):	Y0E11 and Y0E12

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK84:	Y0E07 through Y0E10, Y0E07MS, and Y0E07MSD
VBLK85:	Y0E07DL and Y0E14
VBLK86:	Y0E11 through Y0E13, and Y0E12DL
VBLK88:	Y0E15 through Y0E17, Y0E15DL, and Y0E16DL
VBLK89:	Y0E20 and Y0E18
VBLK90:	Y0E18DL, Y0E19DL, Y0E19, and Y0E11DL
VBLK92:	VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

MS - Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for methylene chloride and acetone in some samples are qualified as nondetected and estimated (U,J) due to contamination in the method blanks and trip blanks.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside QC limits.

SAMPLING ISSUES:

Detected result for acetone in sample Y0E07 is qualified as nondetected and estimated (U,J) due to contamination in the trip blank Y0E10.

ADDITIONAL COMMENTS:

For sample Y0E18, area of the first internal standard (109283) exceeded the upper limit of 109176 by <0.1%. Since the area is only slightly outside the QC limits, no adverse effect on the data quality is expected.

Tentatively identified compounds (TICs) detected in the samples are reported on the Form 1LCFs. Other than laboratory artifacts/contaminants (retention times = 9.0 and 14.1 minutes), TICs were detected in samples Y0E08, Y0E09, Y0E15 and Y0E16 (see attached Form 1LCFs).

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*,
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	C, D
CONTINUING CALIBRATIONS	NO	C, E
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS (DMCs)	NO	F
MATRIX SPIKE/DUPLICATES	NO	H
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	NO	A, G, J
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	I

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank or trip blank contamination, and are flagged "U,J" in Table 1A.

- Methylene Chloride in samples Y0E07, Y0E08, Y0E09, Y0E10, Y0E07MS, and Y0E07MSD

- Acetone in samples Y0E07 and Y0E07MS

Methylene chloride was found in method blanks VBLK84, VBLK85, VBLK86 and VBLK90 at concentrations of 0.2 μg/L, 0.2 μg/L, 0.2 μg/L, and 0.1 μg/L, respectively. Acetone was found in the trip blank Y0E10 at a concentration of 3 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although not detected in the associated method blank, methylene chloride has been commonly found in the field and in many laboratories. The user should note that the methylene chloride result reported in sample Y0E16 (0.1 μg/L) may be an artifact.

Although not detected in the associated trip blanks, chloroform has been commonly found in the field. The user should note that the chloroform results reported in samples Y0E07 (1 μg/L), Y0E15 (0.5 μg/L), Y0E16 (3 μg/L), Y0E07MS (1 μg/L), and Y0E07MSD (1 μg/L) may be artifacts.

Although not detected in the associated trip blanks, the user should note that the acetone found in sample Y0E18 (18 μg/L) and the tetrachloroethene (PCE) results reported in sample Y0E16 (0.6 μg/L) may be artifacts because acetone and PCE were detected in other trip blanks at concentrations of 3-7 μg/L and 0.1 μg/L, respectively.

Although carbon disulfide (0.1-0.2 μg/L), 1,2,3-trichlorobenzene (0.3-0.4 μg/L), and 1,2,4-trichlorobenzene (0.2 μg/L) were found in method blanks, no data are qualified because they were not found in any of the samples associated with these method blanks.

Although toluene (0.1-0.5 μg/L), bromodichloromethane 0.2 μg/L), and dibromochloromethane (0.2 μg/L) were found in the trip blanks, no data are qualified because they were not found in the samples.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the sample sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, methyl acetate, and 2-butanone in all samples, storage blank, and method blanks
- 2-Hexanone in samples Y0E18 and Y0E20 and method blanks VBLK89

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on January 31, 2002. RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on March 2, 2002 through March 7, 2002 (Table 2).

Detected results for the analytes listed above should be considered as the minimum values at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (Table 2). The quantitation of the analytes associated with these DMCs may have been affected by the low RRFs. See Comment F for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The relative response factor evaluates instrument sensitivity and is used in the quantitation of

the target analytes.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent relative standard deviations (RSDs) in the initial calibration, and are flagged "J" in Table 1A.

- Acetone and methylene chloride in all samples, storage blank, and method blanks

Percent RSDs exceeded the ≤30.0% validation criterion for the analytes listed above in the initial calibration performed on January 31, 2002 (Table 2).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Methylene chloride in samples Y0E15 through Y0E17 and method blank VBLK88
- Methylene chloride, cyclohexane, and isopropylbenzene in samples Y0E18 and Y0E20 and method blank VBLK89
- Cyclohexane, methylcyclohexane, and isopropylbenzene in sample Y0E19 and method blank VBLK90
- Acetone and isopropylbenzene in storage blank VHBLK01 and method blank VBLK92

Percent differences exceeded the ±30.0% validation criterion for the analytes listed above in the continuing calibrations performed on March 4, 5, and 7, 2002 (Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

F. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recovery outside QC limits, and are flagged "J" in Table 1A.

{1,1-Dichloroethene-d2}
- trans-1,2-Dichloroethene and cis-1,2-dichloroethene in sample Y0E20

{trans-1,3-Dichloropropene-d4}
- cis-1,3-Dichloropropene, trans-1,3-dichloropropene, and 1,1,2-trichloroethane in samples Y0E07 and Y0E08

Specific DMC recoveries which were outside the QC limits for the target analytes listed above are shown below.

Sample	DMC	%Recovery	QC Limits
Y0E20	1,1-Dichloroethene-d2	58	(65-130)
Y0E07	trans-1,3-Dichloropropene-d4	78	(80-128)
Y0E08	trans-1,3-Dichloropropene-d4	76	(80-128)

Detected results for affected analytes may be biased low. Where the results are nondetected, false negatives may exist. The samples were not re-analyzed.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

G. Detected results for the following analyte are qualified as estimated due to high analyte concentration, and are flagged "J" in Table 1A.

- Trichloroethene in QC samples Y0E07MS and Y0E07MSD

Concentrations of trichloroethene (TCE) in the undiluted analysis of the QC samples exceeded the 0.5-25 μg/L calibration range. The QC samples were not re-analyzed at dilutions.

H. The matrix spike and matrix spike duplicate recoveries and relative percent difference (RPD) for 1,1-dichloroethene (1,1-DCE) and TCE did not meet the criteria for accuracy and precision specified in the SOW, as shown below.

Analyte	Y0E07MS % Recovery	Y0E07MSD % Recovery	RPD	QC Limits RPD	QC Limits % Recovery
1,1-Dichloroethene	60	46	26	≤14	61-145
Trichloroethene	0	-200	-200	≤14	71-120

For TCE, the sample concentration (130 μg/L) greatly exceeded the spike concentration of 5 μg/L; the recoveries and RPD are not meaningful. Results for 1,1-DCE may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis. The effect on data quality is not known.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and analysis.

I. In the analysis of the field duplicate pairs, the following outliers were obtained for the analyte listed below.

Analyte	Y0E08 (D1) Conc. μg/L	Y0E09 (D1) Conc. μg/L	RPD (<25%)
1,1-Dichloroethene	1	0.5U	N/A
1,1,2-Trichloro-1,2,2-trifluoromethane	0.5L	0.5U	N/A
cis-1,3-Dichloropropene	0.5U	0.3L	N/A

Analyte	Y0E11 (D2) Conc. μg/L	Y0E12 (D2) Conc. μg/L	RPD (<25%)
1,1-Dichloroethene	6.7	3.7	58%
trans-1,2-Dichloroethene	0.3L	1.6	N/A
1,1,2-Trichloroethane	0.2L	0.5U	N/A

A relative percent difference (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample but is nondetected (U) at the CRQL in the associated field duplicate sample, or when an analyte is detected below the CRQL in both field duplicate samples. The effect on the data quality is not known.

A RPD of 58% was obtained for 1,1-DCE in the analysis of field duplicate samples Y0E11 and Y0E12. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix or poor sampling or laboratory technique.

J. Samples Y0E11 and Y0E12 were analyzed at dilutions due to the high levels of cis-1,2-DCE. Results for cis-1,2-DCE are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0E19 was analyzed at dilution due to the high level of 1,1-DCE. Results for 1,1-DCE are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Samples Y0E15 and Y0E16 were analyzed at dilutions due to the high levels of acetone. Results for acetone are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Samples Y0E07, Y0E11, Y0E12, Y0E18, and Y0E19 were analyzed at dilutions, due to the high levels of TCE. Results for TCE are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Samples Y0E11, Y0E12, and Y0E19 were analyzed at dilutions due to the high level of tetrachloroethene (PCE). Results for PCE are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

SFUND RECORDS CTR
1110-00356

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072805

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof for D.L.
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105091

DATE: May 23, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	30205
SDG NO.:	Y0E21
LABORATORY:	A4 Scientific, Inc. (A4)
ANALYSIS:	Volatiles
SAMPLES:	9 Water Samples
COLLECTION DATE:	February 25 and 26, 2002
REVIEWER:	Santiago Lee, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment
cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105091-1465/30205/Y0E21V.wpd

Data Validation Report

Case No.:	30205 SDG No.: Y0E21
Site:	Omega Chem OU-2
Laboratory:	A4 Scientific, Inc. (A4)
Reviewer:	Santiago Lee, ESAT/LDC
Date:	May 23 , 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0E21 through Y0E27, Y0EB6, and Y0EB7
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	February 25 and 26, 2002
Sample Receipt Date:	February 27, 2002
Extraction Date:	Not Applicable
Analysis Date:	March 8, 9, 13, and 15, 2002

FIELD QC:

Trip Blanks (TB):	Y0E25 and Y0EB7
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK93:	Y0E25 and Y0E26
VBLK94:	Y0E26DL, Y0E23DL, Y0E22DL, and Y0E21DL
VBLK95:	Y0E21, Y0E23, Y0E24, Y0E27, Y0EB6, and Y0EB7
VBLK99:	Y0E22, Y0E24DL, and Y0E27DL
VBLK02:	VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for methylene chloride, chloroform, and tetrachloroethene (PCE) in some samples are qualified as nondetected and estimated (U,J) due to contamination in the method blanks and trip blanks.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to holding time problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

4) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside QC limits.

5) Detected result for PCE in sample Y0E21 is qualified as estimated (J) due to internal standard area problem.

SAMPLING ISSUES:

Detected results for chloroform in samples Y0EB6 and Y0E27 are qualified as nondetected and estimated (U,J) due to contamination in trip blank Y0EB7.

ADDITIONAL COMMENTS:

Matrix spike/matrix spike duplicate (MS/MSD) pair was not analyzed because the Organic Traffic Report & Chain of Custody Record indicates that VOA MS/MSD is not rrequired.

Tentatively identified compounds (TICs) detected in the samples are reported on the Form 1LCFs. Other than laboratory artifacts/contaminants (retention times = 9.0 and 14.1 minutes), TICs were detected in samples Y0E23, Y0E26, Y0EB6 and Y0EB7 (see attached Form 1LCFs).

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*,
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	NO	C
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	D, E
CONTINUING CALIBRATIONS	NO	D, F
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS (DMCs)	NO	G
MATRIX SPIKE/DUPLICATES	N/A	
INTERNAL STANDARDS	NO	H
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	NO	A, I, J, K
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank or trip blank contamination, and are flagged "U,J" in Table 1A.

- Tetrachloroethene in samples Y0E22 and Y0EB7
- Methylene chloride in storage blank VHBLK01
- Chloroform in samples Y0EB6 and Y0E27

Tetrachloroethene (PCE) was found in the method blanks VBLK94, VBLK95, and VBLK99 at concentrations of 0.2 μg/L each. Methylene chloride was found in the method blank VBLK02 at a concentration of 0.2. Chloroform was found in the trip blank Y0EB7 at a concentration of 0.7 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Although not detected in the associated method blank, methylene chloride has been commonly found in the field and in many laboratories. The user should note that the methylene chloride results reported for samples Y0E22 (0.2 μg/L) and Y0E27 (0.1 μg/L) may be artifacts.

Although trichloroethene (TCE; 0.2 μg/L) was found in the storage blank VHBLK01, no data are qualified because TCE was not detected in the samples or was detected at concentrations which exceeded 5 times the concentration found in the storage blank.

Although acetone (8 and 10 μg/L) and toluene (0.2 and 0.2 μg/L) were found in the trip blanks, no data are qualified because they were not detected in the samples or were detected at concentrations which exceeded 5 times the concentrations found in the trip blanks.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to missed technical holding times, and are flagged "J" in Table 1A.

- All analytes except acetone in sample Y0E22
- TCE in sample Y0E24
- Acetone and PCE in sample Y0E27

These water analyses exceeded the 14-day 40 CFR 136 (Clean Water Act) technical holding times as shown below.

Sample	Date Collected	Date Analyzed	# of Days Exceeded
Y0E22	02/25/02	03/13/02	4
Y0E24DL	02/25/02	03/14/02	5
Y0E27DL	02/26/02	03/14/02	4

Detected results for the samples listed above may be biased low. Where the results are nondetected, false negatives may exist.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, methyl acetate, and 2-butanone in all samples, storage blank, and method blanks

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on January 31, 2002. RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on March 8, 9, 13, and 15, 2002 (Table 2).

Detected results for the analytes listed above should be considered as the minimum values at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (Table 2). The quantitation of the analytes associated with these DMCs may have been affected by the low RRFs. See Comment F for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The relative response factor evaluates instrument sensitivity and is used in the quantitation of the target analytes.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent relative standard deviations (RSDs) in the initial calibration, and are flagged "J" in Table 1A.

- Acetone and methylene chloride in all samples, storage blank, and method blanks

Percent RSDs exceeded the ≤30.0% validation criterion for the analytes listed above in the initial calibration performed on January 31, 2002 (Table 2).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

F. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Isopropylbenzene in samples Y0E25 and Y0E26 and method blank VBLK93
- Methylene chloride in samples Y0E21, Y0E23, Y0E24, Y0E27, Y0EB6, and Y0EB7, storage blank VHBLK01, and method blanks VBLK94, VBLK95, and VBLK02
- Methylene chloride, cyclohexane, methylcyclohexane, PCE, and isopropylbenzene in sample Y0E22 and method blank VBLK99

Percent differences exceeded the ±30.0% validation criterion for the analytes listed above in the continuing calibrations performed on March 8, 9, 13, and 15, 2002 (Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

G. Detected results for the following analytes are qualified as estimated due to DMC recovery outside method QC limits, and are flagged "J" in Table 1A.

{1,1-Dichloroethene-d2}
- trans-1,2-Dichloroethene and cis-1,2-dichloroethene in sample Y0E23

{Chloroform-d}

- 1,1-Dichloroethane (1,1-DCA) in sample Y0E26
- 1,1-DCA and chloroform in sample Y0E23

Specific DMC recoveries which were outside the QC limits for the target analytes listed above are shown below.

Sample	DMC	%Recovery	QC Limits
Y0E23	1,1-Dichloroethene-d2	580	65-130
	Chloroform-d	126	80-123
Y0E26	1,1-Dichloroethene-d2	4400	65-130
	Chloroform-d	600	80-123

Detected results for affected analytes may be biased high.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

H. Detected result for the following analyte is qualified as estimated due to low internal standard (IS) area, and is flagged "J" in Table 1A.

- PCE in sample Y0E21

Area for the IS 1,4-dichlorobenzene-d4 in sample Y0E21DL (18449) is below the lower QC limit of 19157.

I. Detected result for the following analyte is qualified as estimated due to high analyte concentration, and are flagged "J" in Table 1A.

- Acetone in sample Y0E26

Concentration of acetone in the undiluted analysis of the sample Y0E26 (340 μg/L) exceeded the 5-250 μg/L calibration range. The sample was re-analyzed at a 200-dilution; acetone was not detected (1000U).

J. Samples Y0E21 and Y0E23 were analyzed at 10-fold dilutions due to high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factor.

K. Sample Y0E21 was analyzed at a 200-fold dilution due to the high level of PCE. Result for PCE is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E22 was analyzed at a 200-fold dilution due to the high level of acetone. Result for acetone is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E23 was analyzed at a 200-fold dilution due to high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the 10-fold diluted sample.

Sample Y0E24 was analyzed at a 2-fold dilution due to the high level of TCE. Result for TCE is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E26 was analyzed at a 200-fold dilution due to high levels of trichlorofluoromethane, 1,1-dichloroethene (1,1-DCE), 1,1,2-trichloro-1,2,2-trifluoroethane, cis-1,2-DCE, chloroform, TCE, and PCE. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0E27 was analyzed at a 10-fold dilution due to high levels of acetone and PCE. Results for acetone and PCE are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

B0101095

Author: Richard Bauer/R9/USEPA/US **Date:** 05/07/2002 09:44 AM

TECHNICAL DIRECTION FORM # B0101095

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 5/7/02

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate
R02S46	water	up to 40

Instructions: Analyze up to 40 water samples for perchlorate following R9 Lab SOPs for method 314.0.

Deliverables	**Due Dates**
[x] Complete Data Package	**20** days from receipt of last sample in each SDG
[ ] Preliminary Report	
[x] Analytical Report including each SDG WordPerfect & Excel files on diskette	**20** days from receipt of last sample in
[ ] .csv EDD file	

Site Name:	Omega Chemical	**Case #:**	R02S46
City/State:	Whittier, CA		
CERCLIS #:	CAD042245001	**SSID:** **OU:**	BC 02

Project: $F **Purpose:** RI/FS

Sampling Dates: 5/16 - 30/2002 **TAT:** 21 days

Sampler Name: Donald W. "Bill" Clarke III
Roy F. Weston, Inc.
14724 Ventura Blvd., Suite 1000
Sherman Oaks, CA 91403
clarkeb@mail.rfweston.com

Phone: (818) 382-1806 **Fax:** (818) 382-1801 **Cell:** (818) 599-6468

RPM/Section/Phone: Nancy Riveland-Har SFD-7-4 415-972-3251

//

# Samples	Matrix	Analyses/Method
31	water	perchlorate

Comments:

E-mail spreadsheet and report narrative to Bill Clarke: 21 day TAT

Hard copy report: 21 day TAT

TECHNICAL DIRECTION NO. B0105128 Amendment 2

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE:** ~~6-21-02~~ ~~6-24-02~~ 7-1-02

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)
Amendment 1: Add SDGs Y0GP9 and Y0GR9. Delay due date.

Y0GP0.WK4 Y0GR9.WK4

Amendment 2: Y0GP0 for archive only.

B30499.W01046.Y0GP9.wk B30499.W01038.Y0GW6.wk

Data Package Information **Project Information:**
Case# 30499 Data type VO EPA Site Manager Nancy Riveland-Har SDG# ~~Y0GP0 &~~ Y0GW6; GP9 & GR9 Mail Code SFD-7-4 Laboratory A4
[ ] EPA-Lead Non-CLP [ ] REAP EMAX

Level of Review: Tier 3 of volatiles only, focusing on PCE and its degradation products, freons, and BTEX. No review of other data.

Deliverable	**Due date**
[X] Validation Reports	~~7-22-02~~ 7-24-02

Pkgs to ESAT: 6/28
Y0GP0: 2W; GW6: 20W; GP9:20W; GR9:1W
Complete: Rec: Transmit:

SFUND RECORDS CTR
1110-00367

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

SFUND RECORDS CTR
88072816

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof DL
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105128 Amendment 2

DATE: July 16, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	30499
SDG NO.:	Y0GR9
LABORATORY:	Clayton Group Services (CLAYTN)
ANALYSIS:	Volatiles
SAMPLES:	1 Water Sample
COLLECTION DATE:	May 31, 2002
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment
cc: Cecilia Moore, CLP PO USEPA Region 5
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [X] FYI [ ] Attention [ ] Action

SAMPLING ISSUES: [ ] Yes [X] No

B0105128-1702/30499/Y0GR9V.wpd

Data Validation Report

Case No.: 30499 SDG No.: Y0GR9
Site: Omega Chem OU-2
Laboratory: Clayton Group Services (CLAYTN)
Reviewer: Denise McCaffrey, ESAT/LDC
Date: July 16, 2002

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0GR9
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	May 31, 2002
Sample Receipt Date:	June 1, 2002
Analysis Date:	June 6, 2002

FIELD QC:

Trip Blanks (TB):	Y0GR5
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0GR8 and Y0GR9

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKLB: Y0GR9, Y0GR9DL, and VHBLKLA

TABLES:

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review

MS- Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

None.

SAMPLING ISSUES:

None.

ADDITIONAL COMMENTS:

Results for trip blank Y0GR5, collected with the samples of this sample delivery group (SDG) on May 31, 2002, are located in Case No. 30499, SDG No. Y0GP9.

Results for sample Y0GR8, the field duplicate of sample Y0GR9, are included in Case No. 30499, SDG No. Y0GP9.

Tentatively identified compounds (TICs) detected in the sample are reported on Form 1F and is attached to this report.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	YES	
LABORATORY BLANKS	YES	
FIELD BLANKS	YES	
DEUTERATED MONITORING COMPOUNDS (DMCs)	YES	
MATRIX SPIKE/DUPLICATES	YES	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	B, C
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	A

III. Validity and Comments

A. In the analysis of the field duplicate pair, the following outliers were obtained for the analytes listed below.

Analyte	Y0GR8 (D1) Conc. µg/L	Y0GR9 (D1) Conc. µg/L	RPD
Dichlorodifluoromethane	3	10U	N/A
Methyl tert-butyl ether	32	22	37%
1,1-Dichloroethane	0.6	10U	N/A
1,1,1-Trichloroethane	2	10U	N/A
Benzene	0.9	10U	N/A

A relative percent differences (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample but is nondetected (U) at the CRQL in the associated field duplicate sample. The effect on data quality is not known.

It should be noted that sample Y0GR9 was analyzed at a 20-fold dilution, whereas sample Y0GR8 was analyzed undiluted. The lower concentrations detected in sample Y0GR8 were most likely diluted out in sample Y0GR9.

A relative percent difference (RPD) of 37% was obtained for methyl tert-butyl ether in the analysis of field duplicate pair Y0GR8 and Y0GR9. The value obtained for methyl tert-butyl ether in sample Y0GR8 exceeded the calibration range and is considered to be quantitatively questionable. The effect on the data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix or poor sampling or analysis techniques.

B. Sample Y0GR9 was analyzed at a 50-fold dilution due to the high level of 1,1,2-trifluoro-1,2,2-trichloroethane. The result for 1,1,2-trifluoro-1,2,2-trichloroethane is reported from the 50-fold diluted sample in Table 1A; results for all other analytes are reported from the original analysis performed at a 20-fold dilution.

C. Sample Y0GR9 was analyzed at a 20-fold dilution due to the high levels of target analytes. The CRQLs listed for this sample in Table 1A have been multiplied by the dilution factor.

SFUND RECORDS CTR
1110-00368

SFUND RECORDS CTR
88072817

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105128 Amendment 2

DATE: July 17, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	30499
SDG NO.:	Y0GP9
LABORATORY:	Clayton Group Services (CLAYTN)
ANALYSIS:	Volatiles
SAMPLES:	20 Water Samples
COLLECTION DATE:	May 28, 29, 30, and 31, 2002
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment
cc: Cecilia Moore, CLP PO USEPA Region 5
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105128-1701/30499/Y0GP9V.wpd

Data Validation Report

Case No.:	30499	SDG No.:	Y0GP9
Site:	Omega Chem OU-2		
Laboratory:	Clayton Group Services (CLAYTN)		
Reviewer:	Denise McCaffrey, ESAT/LDC		
Date:	July 17, 2002		

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0GP9, Y0GQ0, Y0GQ1, Y0GQ2, Y0GQ3, Y0GQ4, Y0GQ5, Y0GQ6, Y0GQ7, Y0GQ8, Y0GQ9, Y0GR0, Y0GR1, Y0GR2, Y0GR3, Y0GR4, Y0GR5, Y0GR6, Y0GR7, and Y0GR8
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	May 28, 29, 30, and 31, 2002
Sample Receipt Date:	May 29, 30, 31, and June 1, 2002
Extraction Date:	Not Applicable
Analysis Date:	June 3, 4, 5, 6, and 7, 2002

FIELD QC:

Trip Blanks (TB):	Y0GP9, Y0GQ6, Y0GQ9, and Y0GR5
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0GR4
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0GQ1 and Y0GQ2
Field Duplicates (D2):	Y0GR8 and Y0GR9 (see Additional Comments)

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKLY:	Y0GP9, Y0GQ0, Y0GQ1, Y0GQ4, and Y0GQ5
VBLKLZ:	Y0GQ5DL, Y0GQ6, Y0GQ7, Y0GQ8, Y0GQ8DL, Y0GQ9, and Y0GR0
VBLKLA:	Y0GR1, Y0GR2, Y0GR2MS, Y0GR2MSD, Y0GR3, Y0GR4, Y0GR5, and Y0GR8
VBLKLB:	Y0GR6, Y0GR7, and Y0GR8DL
VBLKLC:	Y0GQ2, Y0GQ3, and VHBLKLA

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

MS- Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for several analytes are qualified as nondetected and estimated (U,J) due to contamination in the storage blank, trip blank, and equipment blank.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

SAMPLING ISSUES:

Detected results for bromoform are qualified as nondetected and estimated (U,J) due to contamination in trip blank Y0GQ9 and equipment blank Y0GR4.

ADDITIONAL COMMENTS:

Results for sample Y0GR9, the field duplicate of sample Y0GR8, are included in Case No. 30499, SDG No. Y0GR9.

Tentatively identified compounds (TICs) detected in the samples are reported on Form 1Fs and are attached to this report.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	B
LABORATORY BLANKS	NO	A
FIELD BLANKS	NO	A
DEUTERATED MONITORING COMPOUNDS (DMCs)	YES	
MATRIX SPIKE/DUPLICATES	YES	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	NO	C, E, F, G, H
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	D

III. Validity and Comments

A. The following results are qualified as nondetected and estimated due to storage blank, trip blank, and equipment blank contaminations, and are flagged "U,J" in Table 1A.

- Acetone in samples Y0GP9, Y0GQ8, Y0GQ9, Y0GR2, Y0GR2MS, Y0GR2MSD, and Y0GR5
- Chloroform in samples Y0GQ4 and Y0GR8
- Bromoform in sample Y0GR0

Acetone and chloroform were found in storage blank VHBLKLA at concentrations of 9 μg/L and 0.5 μg/L, respectively. Bromoform was found in trip blank Y0GQ9 and equipment blank Y0GR4 at concentrations of 0.5 μg/L and 0.5 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

B. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Bromomethane in samples Y0GP9, Y0GQ0, Y0GQ1, Y0GQ4, Y0GQ5, and method blank VBLKLY
- 2-Butanone in samples Y0GR1, Y0GR2, Y0GR2MS, Y0GR2MSD, Y0GR3, Y0GR4, Y0GR5, Y0GR8, and VBLKLA

A percent difference of −31.9% was observed for bromomethane in the continuing calibration performed on June 3, 2002. A percent difference of +32.6% was observed for 2-butanone in the continuing calibration performed on June 5, 2002. These values exceed the ±30.0% validation criterion.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

C. Detected results for the following analytes are qualified as estimated due to high analyte concentration, and are flagged "J" in Table 1A.

- Methyl tert-butyl ether and trichloroethene in sample Y0GR8

Concentrations of methyl tert-butyl ether and trichloroethene in the undiluted analysis of the sample were 32 μg/L and 26 μg/L, respectively. These values exceed the 25μg/L calibration range. The laboratory reanalyzed the sample at a 100-fold dilution, thus diluting out these analytes.

Results reported in Table 1A for these analytes are from the undiluted sample. These values are considered to be qualitatively acceptable but quantitatively questionable and should be considered as the minimum concentrations at which these analytes are present in the sample.

D. In the analysis of the field duplicate pairs, the following outliers were obtained for the analytes listed below.

Analyte	Y0GQ1 (D1) Conc. μg/L	Y0GQ2 (D1) Conc. μg/L	RPD
1,1-Dichloroethene	25U	21	N/A
Carbon tetrachloride	25U	31	N/A
Chloroform	25U	180	N/A

Analyte	Y0GR8 (D2) Conc. μg/L	Y0GR9 (D2) Conc. μg/L	RPD
Dichlorodifluoromethane	3	10U	N/A
Methyl tert-butyl ether	32	22	37%
1,1-Dichloroethane	0.6	10U	N/A
1,1,1-Trichloroethane	2	10U	N/A
Benzene	0.9	10U	N/A

A relative percent differences (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample but is nondetected (U) at the CRQL in the associated field duplicate sample. The effect the on data quality is not known.

It should be noted that sample Y0GR9 was analyzed at a 20-fold dilution, whereas sample Y0GR8 was analyzed undiluted. The lower concentrations detected in sample Y0GR8 were most likely diluted out in sample Y0GR9.

It should be noted that sample Y0GQ1 was analyzed at a 50-fold dilution, whereas sample Y0GQ2 was analyzed at a 20-fold dilution. The lower concentrations detected in sample Y0GQ2 were most likely diluted out in sample Y0GQ1.

A relative percent difference (RPD) of 37% was obtained for methyl tert-butyl ether in the analysis of field duplicate pair Y0GR8 and Y0GR9. The value obtained for methyl tert-butyl ether in sample Y0GR8 exceeded the calibration range and is considered to be quantitatively questionable. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix or poor sampling or analysis techniques.

E. Sample Y0GQ5 was analyzed at a 10-fold dilution due to the high levels of trichlorofluoromethane and 1,1,2-trichloro-1,2,2-trifluoroethane. Results for trichlorofluoromethane and 1,1,2-trichloro-1,2,2-trifluoroethane are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

F. Sample Y0GQ8 was analyzed at a 20-fold dilution due to the high levels of tetrachloroethene. Results for tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

G. Sample Y0GR8 was analyzed at a 100-fold dilution due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, and tetrachloroethene. Results for trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

H. Samples Y0GQ0, Y0GQ1, Y0GQ2, Y0GQ3, Y0GQ4, Y0GQ7, Y0GR0, Y0GR1, Y0GR2, Y0GR2MS, Y0GR2MSD, Y0GR3, Y0GR6, and Y0GR7 were analyzed at dilutions due to the high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factors.

SFUND RECORDS CTR
130590

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof for DL
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105128 Amendment 2

DATE: August 7, 2002

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	30499
SDG NO.:	Y0GW6
LABORATORY:	A4 Scientific, Inc.
ANALYSIS:	Volatiles
SAMPLES:	20 Water Samples
COLLECTION DATE:	May 21, 22, 23, and 24, 2002
REVIEWER:	Denise McCaffrey, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment
cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [X] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105128-1736/30499/Y0GW6V.wpd

Data Validation Report

Case No.:	30499	SDG No.:	Y0GW6
Site:	Omega Chem OU-2		
Laboratory:	A4 Scientific, Inc.		
Reviewer:	Denise McCaffrey, ESAT/LDC		
Date:	August 7, 2002		

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0GN0, Y0GN1, Y0GN2, Y0GN3, Y0GN4, Y0GN5, Y0GN6, Y0GN7, Y0GN8, Y0GN9, Y0GP0, Y0GP1, Y0GP2, Y0GP3, Y0GP4, Y0GP5, Y0GP6, Y0GP7, Y0GP8, and Y0GW6
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	May 21, 22, 23, and 24, 2002
Sample Receipt Date:	April 4 and May 22, 23, and 25, 2002
Extraction Date:	Not Applicable
Analysis Date:	May 31 and June 1, 2, 3, and 4, 2002

FIELD QC:

Trip Blanks (TB):	Y0GN1, Y0GN4, Y0GN9, and Y0GP4
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0GN5 and Y0GN6

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKEI:	Y0GN2, Y0GN3DL, Y0GN4, Y0GP0, Y0GP3, Y0GN2MS, and Y0GN2MSD
VBLKEJ:	Y0GN0, Y0GN0DL, Y0GN1, and Y0GN3
VBLKEK:	Y0GN5, Y0GN5DL, Y0GN6, Y0GN6DL, Y0GN7, Y0GN7DL, Y0GN8, Y0GN9, and Y0GP3DL
VBLK13:	Y0GP4, Y0GP5DL, Y0GP6DL, Y0GP7DL, and Y0GW6
VBLKEL:	Y0GP1, Y0GP1DL, Y0GP2, and Y0GP2DL
VBLKEM:	Y0GP5, Y0GP6, Y0GP7, and Y0GP8
VBLKEN:	VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

MS- Matrix Spike, MSD - Matrix Spike Duplicate, DL - Dilution

CLP PO ACTION:

Quantitation limits for several analytes in sample Y0GN6 are qualified as rejected (R) due to very low Deuterated Monitoring Compound (DMC) recoveries.

CLP PO ATTENTION:

1) Detected results for methylene chloride and acetone in several samples are qualified as nondetected and estimated (U,J) due to contamination in the method blanks and trip blanks.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to low DMC recoveries.

SAMPLING ISSUES:

Detected results for acetone are qualified as nondetected and estimated (U,J) due to contamination in trip blanks Y0GN1, Y0GN4, and Y0GN9.

ADDITIONAL COMMENTS:

Tentatively identified compounds (TICs) detected in the samples are reported on Form 1LCFs. Other than laboratory artifacts/contaminants (retention time = 6.5 minutes), TICs were detected in samples Y0GN2 and Y0GW6 (see attached Form 1LCFs).

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	D, E
CONTINUING CALIBRATIONS	NO	D, F
LABORATORY BLANKS	NO	C
FIELD BLANKS	NO	C
DEUTERATED MONITORING COMPOUNDS (DMCs)	NO	A, G
MATRIX SPIKE/DUPLICATES	NO	H
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	B, J
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	I

III. Validity and Comments

A. Quantitation limits for the following analytes are qualified as rejected due to very low DMC recoveries (<10%), and are flagged "R" in Table 1A.

{2-Butanone-d5}
- Acetone and 2-butanone in sample Y0GN6

{Chloroform-d}
- Bromochloromethane in sample Y0GN6

DMC recoveries for the analytes listed above are shown below.

Sample	DMC	%Recovery	QC Limits
Y0GN6	2-Butanone-d5	2	42-171
	Chloroform-d	1	80-123

Since the results are nondetected, false negatives may exist.

Deuterated Monitoring Compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

B. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

C. The following results are qualified as nondetected and estimated due to method blank and trip blank contamination, and are flagged "U,J" in Table 1A.

- Methylene chloride in samples Y0GN9, Y0GP3, Y0GN2MS, and Y0GN2MSD
- Acetone in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN6, and Y0GN7

Methylene chloride was found in method blanks VBLKEI, VBLKEJ, VBLKEK, VBLKEM, and VBLKEN at concentrations of 0.6 μg/L, 0.3 μg/L, 0.4 μg/L, 0.2 μg/L, and 0.3 μg/L, respectively. Acetone was found in trip blanks Y0GN1, Y0GN4, and Y0GN9 at concentrations of 6 μg/L, 5 μg/L, and 4 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result (U,J). If the sample result is less than the CRQL, the result is reported as nondetected (U,J) at the CRQL.

Acetone concentrations detected in samples Y0GP1 and Y0GP3 are not qualified since they exceeded 10 times the amount in the associated trip blank (Y0GN9).

Methylene chloride has been commonly found as a contaminant in the field and in many laboratories. Although not detected in any of the associated blanks, the user should note that the methylene chloride detected in sample Y0GP4 may be an artifact.

Although toluene was detected in trip blanks Y0GN1, Y0GN4, Y0GN9, and Y0GP4 at concentrations of 0.3 μg/L, 0.4 μg/L, 0.4 μg/L, and 0.3 μg/L, respectively, no data are qualified because toluene was not detected in any of the samples associated with these blanks.

Although cis-1,3-dichloropropene was found in method blanks VBLKEI (0.4 μg/L) and VBLKEN (0.4 μg/L), 1,2,3-trichlorobenzene was found in method blanks VBLKEI (0.4 μg/L) and VBLKEM (0.5 μg/L), 1,2,4-trichlorobenzene was found in method blank VBLKEM (0.4 μg/L), and trans-1,3-dichloropropene was found in method blank VBLKEN (0.3 μg/L), no data are qualified because these analytes were not detected in any of the samples associated with the method blanks.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during extraction and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone in all samples and blanks
- 2-Butanone in samplesYOGN0, Y0GN1, Y0GN3, Y0GP1, Y0GP2, Y0GP5, Y0GP6, Y0GP7, and Y0GP8, storage blank VHBLK01, and method blanks VBLKEJ, VBLKEL, and VBLKEM

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on May 22, 2002 (Table 2). RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on May 31, June 1, 2, 3, 4, and 5, 2002 (Table 2).

Detected results for the analytes listed above should be considered as the minimum concentrations at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

It should be noted that the results for acetone in sample Y0GN6 were previously rejected. Please refer to Comment A.

The DMCs 2-butanone-d5 and 2-hexanone-d5 also had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (Table 2). Quantitation of the analytes associated with these DMCs may have been affected by the low RRFs. See Comments A and G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large relative standard deviations (RSDs) in the initial calibrations, and are flagged "J" in Table 1A.

- Acetone, methyl acetate, styrene, isopropylbenzene, and 1,2-dibromo-3-chloropropane in samples Y0GP4 and Y0GW6 and method blank VBLK13
- 1,2,3-trichlorobenzene in all samples and blanks

Percent RSDs exceeding the ≤30.0% validation criterion were observed for the analytes listed above in the initial calibrations performed on May 22 and 26, 2002 (Table 2).

The DMC 1,2-dichlorobenzene-d4 also had a RSD outside the ≤30.0% validation criterion in the initial calibration (Table 2). Quantitation of the analytes associated with this DMC may have been affected by the RSD out of QC limits. See Comments A and G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

F. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Benzene, 1,2-dichloropropane, and 2-hexanone in samples Y0GP4 and Y0GW6 and method blank VBLK13
- 4-Methyl-2-pentanone in samples Y0GP4 and Y0GW6, storage blank VHBLK01, and method blanks VBLK13 and VBLKEN
- 1,2,3-Trichlorobenzene in samples Y0GN5, Y0GN6, Y0GN7, Y0GN8, Y0GN9, Y0GP4, Y0GP5, Y0GP6, Y0GP7, Y0GP8, and Y0GW6, storage blank VHBLK01, and method blanks VBLK13, VBLKEK, VBLKEM, and VBLKEN
- Methyl tert-butyl ether in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN4, Y0GN5, Y0GN6, Y0GN7, Y0GN8, Y0GN9, Y0GP0, and Y0GP3, storage blank VHBLK01, and method blanks VBLKEI, VBLKEK, and VBLKEN
- 1,2-Dibromoethane in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN4, Y0GP0, and Y0GP3 and method blank VBLKEI
- 1,2-Dibromo-3-chloropropane in samples Y0GN2, Y0GN2MS, Y0GN2MSD, Y0GN4, Y0GP0, Y0GP1, Y0GP2, Y0GP3, Y0GP5, Y0GP6, Y0GP7, and Y0GP8 and method blanks VBLKEI, VBLKEL, and VBLKEM
- Cyclohexane in samples Y0GN0, Y0GN1, Y0GN3, Y0GP1 and Y0GP2 and method blanks VBLKEJ, and VBLKEL

- Tetrachloroethene in samples Y0GN5, Y0GN6, Y0GN7, Y0GN8, and Y0GN9 and method blank VBLKEK

- Chloromethane and acetone in samples Y0GP1 and Y0GP2 and method blank VBLKEL

- 2-Butanone in samples Y0GP1, Y0GP2, Y0GP5, Y0GP6, Y0GP7, and Y0GP8, storage blank VHBLK01, and method blanks VBLKEL, VBLKEM, and VBLKEN

- 1,2,4-Trichlorobenzene in samples Y0GP5, Y0GP6, Y0GP7, and Y0GP8 and method blank VBLKEM

Percent differences exceeding the ±30.0% validation criterion were observed for the analytes listed above in the continuing calibrations performed on May 31, June 1, 2, 3, 4, and 5, 2002 (Table 2).

The DMCs vinyl chloride-d3, chloroethane-d5, 1,1-dichloroethene-d2, benzene-d6, 1,2-dichloropropane-d6, toluene d8, and 2-hexanone-d5 also had %Ds outside the ±30.0% validation criterion in the continuing calibrations (Table 2). Quantitation of the analytes associated with these DMCs may have been affected by the %Ds out of QC limits. See Comments A and G for a complete listing of sample data qualified by DMC results outside of recovery criteria.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

G. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{Toluene-d8}
- Trichloroethene, toluene, tetrachloroethene, ethylbenzene, xylenes, styrene, and isppropylbenzene in sample Y0GW6

{1,1-Dichloroethene-d2}
- Trans-1,2-dichloroethene and cis-1,2-dichloroethene in sample Y0GP2

{Chloroform-d}
- 1,1-Dichloroethane, bromochloromethane, and chloroform in samples Y0GP2 and Y0GP8
- 1,1-Dichloroethane and chloroform in sample Y0GN6

{1,2-Dichloroethane-d4}
- Trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, methyl acetate, methylene chloride, methyl-tert-butyl ether, 1,1,1-trichloroethane, carbon tetrachloride, and 1,2-dichloroethane in sample Y0GP8

{trans-1,3-Dichloropropene-d4}
- cis-1,3-Dichloropropene, trans-1,3-dichloropropene, and 1,1,2-trichloroethane in sample Y0GP8

DMC recoveries outside QC limits for the analytes listed above are shown below.

Sample	DMC	%Recovery	QC Limits
Y0GW6	Toluene-d8	76	77-120
Y0GN6	Chloroform-d	1	80-123
Y0GP2	1,1-Dichloroethene-d2	64	65-130
	Chloroform-d	74	80-123
Y0GP8	Chloroform-d	78	80-123
	1,2-Dichloroethane-d4	76	78-129
	trans-1,3-Dichloropropene-d4	78	80-128

Detected results for the above listed analytes may be biased low. Where the results are nondetected, false negatives may exist.

H. The matrix spike duplicate recoveries and relative percent differences (RPDs) for several analytes in QC samples Y0GN2MS and Y0GN2MSD did not meet the criteria for accuracy and precision specified in the SOW. Percent recoveries and RPDs for these analytes are presented below.

	Y0GN2MSD		QC Limits	
Analyte	%Recovery	RPD	RPD	%Recovery
1,1-Dichloroethene	146	---	---	61-145
Benzene	144	13	≤11	76-127
Trichloroethene	132	16	≤14	71-120
Toluene	138	---	---	76-125
Chlorobenzene	138	---	---	75-130

Results obtained may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis. The effect on data quality is not known.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and analysis.

I. In the analysis of the field duplicate pairs, the following outliers were obtained for the analytes listed below.

Analyte	Y0GN5 (D1) Conc. µg/L	Y0GN6 (D1) Conc. µg/L	RPD (<25%)
1,1,2-Trichloro-1,2,2-trifluoroethane	1200	920	26
Bromodichloromethane	0.5U	0.2L	N/A

A relative percent differences (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample at below the CRQL but is nondetected (U) at the CRQL in the field duplicate sample. The effect on data quality is not known.

A RPD of 26% was obtained for 1,1,2-trichloro-1,2,2-trifluoroethane in the analysis of field duplicate pair Y0GN5 and Y0GN6. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, method defects, or poor sampling or analysis techniques.

J. Samples Y0GN0,Y0GP5, and Y0GP7 were analyzed at 5-fold, 10-fold, and 40-fold dilutions, respectively, due to the high levels of tetrachloroethene. Results for tetrachloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0GN3 was analyzed at a 80-fold dilution due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene. Results for trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Samples Y0GN5 and Y0GN6 were analyzed at 100-fold dilutions due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, chloroform, trichloroethene, and tetrachloroethene. Results for trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, chloroform, trichloroethene, and tetrachloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0GN7 was analyzed at a 10-fold dilution due to the high level of trichloroethene. The result for trichloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Samples Y0GP1 and Y0GP3 were analyzed at 4-fold and 10-fold dilutions, respectively, due to the high levels of acetone. Results for acetone are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0GP2 was analyzed at a 40-fold dilution due to the high levels of trichloroethene and tetrachloroethene. Results for trichloroethene and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

TECHNICAL DIRECTION NO. B0105132

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE:** 7-2-02

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package Information **Project Information:**
Case# 11-BCCO-27.0 Data type 1,4-dioxane EPA Site Manager Nancy Riveland-Har SDG# 02E-241 & 247; & 2F-003 Mail Code SFD-7-4 Laboratory EMAX
[ ] EPA-Lead Non-CLP [X] REAP EMAX

Deliverable **Due date**
[X] Tier 1A Reports 8-07-02

Pkgs to ESAT: 7-5
02E-241:3W; 247:4W
02F-003: 4W
Complete: Rec: Transmit:

SFUND RECORDS CTR
130589

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Nancy Riveland-Har
Remedial Project Manager
Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong RF
ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof for DL
Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105132

DATE: August 6, 2002

SUBJECT: Tier 1A Cover Memo for Omega Chem OU-2 Site, Case No. 11-BBCO-27.0, SDG Nos. 02E241, 02E247 and 02F003, Water Samples for 1,4-Dioxane by SW-846 Method 8270C and Selective Ion Monitoring.

A limited evaluation of the data package was performed to identify any key analytical issues/deficiencies affecting data quality. This evaluation approach is employed when in-depth data review is not required as indicated by the data user. During this limited evaluation, areas of concern were noted (see Lettered and Additional Comments).

The evaluation included: a review of the data package for completeness; review of the chain of custody forms (against laboratory reported information, for signatures, for sample condition upon receipt by the laboratory and for sample preservation); review of holding times; review of QC summaries; review of blanks for contamination; review of standards data; random check of reported results against raw data; random check of raw data for interference problems or system control problems (e.g. baseline anomalies, baseline drifts, etc.).

The following data quality issues should be noted:

A. Results denoted with an "L" qualifier are estimated and flagged "J" in Tier 1A Table 1A. Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Detected results and quantitation limits for 1,4-dioxane in method blank SVF002WB and all samples except GW202-OW1B-0116 are qualified as nondetected and estimated and flagged "J" in Tier 1A Table 1A due to laboratory control sample/laboratory control sample duplicate (LCS/LCSD) problem (relative percent difference = 88%; QC limit $\leq$ 30%). The LCS/LCSD and associated samples were not re-extracted.

C. In the analysis of the field duplicate pair GW202-OW6-0048 and GW202-OW6-1048, a relative percent different value of 172% was obtained for 1,4-dioxane (QC limits $\leq$25%). The effect on data quality is not known.

Additional Comments:

Sample GW202-OW1A-0080 was analyzed at a 940-fold dilution due to the high level of 1,4-dioxane (15,000 ug/L). Consequently, the surrogate was diluted-out and could not be evaluated by the reviewer.

Tier 1A Table 1A is attached.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment.

B0101123

Author: Richard Bauer/R9/USEPA/US **Date:** 08/02/2002 09:44 AM

TECHNICAL DIRECTION FORM # B0101123

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 8/2/02

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate	1,4-dioxane
R02S75	water	up to 40	up to 20

Instructions: Analyze up to 40 water samples for perchlorate following R9 Lab SOPs for method 314.0 and up to 20 water samples for 1,4-dioxane following R9 Lab SOP 315 and addendum for 1,4-dioxane analysis.

Deliverables	**Due Dates**
[x] Complete Data Package	**20** days from receipt of last sample in each SDG
[ ] Preliminary Report	
[x] Analytical Report including each SDG WordPerfect & Excel files on diskette	**20** days from receipt of last sample in
[ ] .csv EDD file	

Site Name:	Omega Chemical	**Case #:**	R02S75
City/State:	Whittier, CA		
CERCLIS #:	CAD042245001	**SSID**: **OU:**	BC 02
Project:	$F	**Purpose:**	RI/FS
Sampling Dates:	8/20/02 - 09/06/02	**TAT:**	21 days

Sampler Name: Donald W. "Bill" Clarke III
Roy F. Weston, Inc.
14724 Ventura Blvd., Suite 1000
Sherman Oaks, CA 91403
clarkeb@mail.rfweston.com

Phone: (818) 382-1806 **Fax:** (818) 382-1801 **Cell:** (818) 599-6468

RPM/Section/Phone: Nancy Riveland-Har SFD-7-4 415-972-3251

//

# Samples	Matrix	Analyses/Method
12	water	1,4-dioxane
31	water	perchlorate

Comments:

E-mail spreadsheet and report narrative to Bill Clarke: 21 day TAT

Hard copy report: 21 day TAT

B0101145

Author: Richard Bauer/R9/USEPA/US **Date:** 11/07/2002 02:03 PM

TECHNICAL DIRECTION FORM # B0101145

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 8/2/02

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate	1,4-dioxane
R03S08	water	up to 40	up to 40

Instructions: Analyze up to 40 water samples for perchlorate following R9 Lab SOPs for method 314.0 and up to 40 water samples for 1,4-dioxane following R9 Lab SOP 315 and addendum for 1,4-dioxane analysis.

Deliverables	**Due Dates**
[x] Complete Data Package	**20** days from receipt of last sample in each SDG
[ ] Preliminary Report	
[x] Analytical Report including each SDG WordPerfect & Excel files on diskette	**20** days from receipt of last sample in
[ ] .csv EDD file	

Site Name:	Omega Chemical	**Case #:**	R03S08
City/State:	Whittier, CA		
CERCLIS #:	CAD042245001	**SSID**: **OU:**	BC 02
Project:	$F	**Purpose:**	RI/FS
Sampling Dates:	11/11 - 11/25/02	**TAT:**	21 days

Sampler Name: Donald W. "Bill" Clarke III

Roy F. Weston, Inc.
14724 Ventura Blvd., Suite 1000
Sherman Oaks, CA 91403
clarkeb@mail.rfweston.com

Phone: (818) 382-1806 **Fax:** (818) 382-1801 **Cell:** (818) 599-6468

RPM/Section/Phone: Nancy Riveland-Har SFD-7-4 415-972-3251

//

# Samples	Matrix	Analyses/Method
31	water	1,4-dioxane
31	water	perchlorate

Comments:

E-mail spreadsheet and report narrative to Bill Clarke: 21 day TAT

Hard copy report: 21 day TAT

TECHNICAL DIRECTION NO. B0105165 Amendment 1

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE:** ~~1-2-03~~ 1/30/03

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Amendment 1: Add SDG Y0MX5; delay due date to 2-12-03.

Y0MX5.WK4

Data Package Information **Project Information:**

Case# 31171 Data type VO EPA Site Manager Nancy Riveland-Har SDG# Y0MS4, MS8 & MT8 Mail Code SFD-7-4 Laboratory Shealy & Datac

[ ] EPA-Lead Non-CLP [ ] REAP EMAX

Y0MS8.WK4 Y0MS4.WK4 Y0MT8.WK4

Level of Review: Tier 3 of volatiles only, focusing on PCE and its degradation products, freons, and BTEX. No review of other data.

Deliverable	**Due date**
[X] Validation Reports	2-12-03 ~~2-10-03~~

Pkgs to ESAT: 1/6; Y0MX5:1/31 8W
Complete: Rec: Transmit:

2010230

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Nancy Riveland-Har, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105165 Amendment 1

DATE: February 11, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	*CAD042245001*
CASE NO.:	31171
SDG NO.:	Y0MS4
LABORATORY:	Shealy Environmental Services, Inc. (SHEALY)
ANALYSIS:	Volatiles
SAMPLES:	8 Water Samples
COLLECTION DATE:	November 13 through 15, 2002
REVIEWER:	Nanny Estrada, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Cecilia Moore, CLP PO USEPA Region 5
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.:	31171 SDG No.: Y0MS4
Site:	Omega Chem OU-2
Laboratory:	Shealy Environmental Services, Inc.
Reviewer:	Nanny Estrada, ESAT/LDC
Date:	February 11, 2003

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0MS4, Y0MS5, Y0MS6, Y0MS7, Y0MT2, Y0MT4, Y0MT5 and Y0MT6
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	November 13 through 15, 2002
Sample Receipt Date:	November 14 through 19, 2002
Extraction Date:	Not Applicable
Analysis Date:	November 18, 19, 24 and 26, 2002

FIELD QC:

Trip Blanks (TB):	Y0MS7 and Y0MT5
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK18:	Y0MS4, Y0MS5 and Y0MS7
VBLK19:	Y0MS6 and Y0MS5DL
VBLK24:	Y0MT2 and Y0MT5
VBLK26:	Y0MT2DL, Y0MT4, Y0MT6 and VHBLK81

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

VHBLK - Storage Blank, DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for some analytes are qualified as nondetected and estimated (U,J) due to method blank contamination.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside QC limits.

SAMPLING ISSUES:

1) Detected results for some analytes are qualified as nondetected and estimated (U,J) due to trip blank contamination.

2) There were no sampler's signatures on some of the Traffic Report & Chain of Custody Records (TR/COC).

3) Lab QCs were marked for VOA, BNA and PEST on the TR/COCs. The laboratory's SDG Narrative states that "Per instruction from Region 9, lab QC is only needed for the PEST/PCB fraction."

ADDITIONAL COMMENTS:

Other than laboratory artifacts/contaminants (approximate retention times = 2.55 and 5.3 minutes), tentatively identified compounds were not detected in the samples.

Manual integrations were performed on some analytes in the calibration standards due to poor response or incorrect auto integration. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program (CLP) Statement of Work for Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES/PRESERVATION	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	C, D
CONTINUING CALIBRATIONS	NO	C, E
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS	NO	F
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
MATRIX SPIKE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, G
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to laboratory or trip blank contamination, and are flagged "U,J" in Table 1A.

- Acetone and methylene chloride in sample Y0MS5
- Chloromethane in samples Y0MS7 and Y0MT4
- Carbon disulfide in samples Y0MS4, Y0MS7 and Y0MT6
- Chloroform in samples Y0MS4 and Y0MS5
- Tetrachloroethene in sample Y0MS4

Acetone was found in method blank VBLK26 and trip blanks Y0MS7 and Y0MT5 at concentrations of 3 μg/L, 5 μg/L and 5 μg/L, respectively. Chloromethane was found in method blanks VBLK18 and VBLK19 and trip blank Y0MT5 at concentrations of 0.2 μg/L, 0.2 μg/L, and 0.2 μg/L, respectively. Carbon disulfide was found in method blanks VBLK18 and VBLK19 and trip blank Y0MT5 at concentrations of 0.02 μg/L, 0.04 μg/L, and 0.06 μg/L, respectively. Chloroform was found in method blank VBLK18 and trip blank Y0MT5 at concentrations of 0.2 μg/L and 0.05 μg/L, respectively. Methylene chloride was found in method blanks VBLK19 and VBLK26 and trip blanks Y0MS7 and Y0MT5 at concentrations of 0.1 μg/L, 0.1 μg/L, 0.2 μg/L and 0.2 μg/L, respectively. Tetrachloroethene was found in trip blanks Y0MS7 and Y0MT5 at concentrations of 0.3 μg/L and 0.2 μg/L. Results for the

samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank. *If the sample result is greater than the* CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Vinyl chloride in sample Y0MT2 (0.2 μg/L), chloroform in samples Y0MS6 (0.4 μg/L) and Y0MT2 (0.9 μg/L), and xylenes (total) in sample Y0MT6 (0.6 ug/L) are not qualified as nondetected and estimated because they are not detected in the associated method blank or trip blank. The user should note that these analytes may be artifacts because they were found in other method blanks or trip blank.

Although toluene was found in trip blank Y0MS7 at a concentration of 0.1 μg/L, no data are qualified because toluene was not found in the samples.

A laboratory method blank is laboratory reagent water, analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, 2-butanone and 2-hexanone in all samples, method blanks and storage blank VHBLK81

Average RRFs of 0.021, 0.024 and 0.048 were observed for acetone, 2-butanone and 2-hexanone in the initial calibration performed on November 18, 2002. RRFs of 0.017 and 0.023 were observed for acetone and 2-butanone, respectively, in the continuing calibration performed on November 18, 2002. RRFs of 0.022, 0.019 and 0.043 were observed for acetone, 2-butanone and 2-hexanone, respectively, in the continuing calibration performed on November 19, 2002. RRFs of 0.031, 0.020 and 0.042 were observed for acetone, 2-butanone and 2-hexanone, respectively, in the continuing calibration performed on November 24, 2002. RRFs of 0.020, 0.020 and 0.046 were observed for acetone, 2-butanone and 2-hexanone, respectively, in the continuing calibration performed on November 26, 2002. These RRFs are below the 0.05 validation criterion.

Detected results for the analytes listed above should be considered as the minimum concentrations at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

D. Detected results and quantitation limit for the following analyte are estimated due to a large percent relative standard deviation (RSD) in the initial calibration, and are flagged "J" in Table 1A.

- 1,2-Dibromo-3-chloropropane in all samples, method blanks and storage blank VHBLK81

A percent RSD of 48.0% was observed for 1,2-dibromo-3-chloropropane in the initial calibration performed on November 18, 2002. This value exceeds the ≤30.0% validation criterion.

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analytes are estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Dichlorodifluoromethane in samples Y0MS6, Y0MT2 and Y0MT5 and method blank VBLK19 and VBLK24
- Cyclohexane and methylcyclohexane in sample Y0MS6
- Chloroethane, trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, acetone and methylene chloride in samples Y0MT2 and Y0MT5 and method blank VBLK24

Percent differences exceeding the ±30% validation criterion were observed in the continuing calibrations performed on November 19 and 24, 2002 (see Table 2).

The continuing calibration checks the instrument's performance daily and produces relative response factors (RRFs) for target analytes that are used for quantitation..

F. Detected results and quantitation limits for the following analytes are estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{1,1,2,2-Tetrachloroethane-d2}
- 1,1,2,2-Tetrachloroethane and 1,2-dibromo-3-chloropropane in method blank VBLK19

{1,2-Dichloropropane-d6}
- Bromodichloromethane in sample Y0MT4

{1,2-Dichloroethane-d4}
- 1,1,2-trichloro-1,2,2-trifluoroethane in sample Y0MT6

DMC recoveries outside QC limits are shown below.

Sample	Surrogate	% Recovery	QC Limits
VBLK19	1,1,2,2-Tetrachloroethane-d2	74	75-131
Y0MT2	Bromoform-d	140	76-135
Y0MT2DL	Benzene-d6	122	78-121
Y0MT4	Benzene-d6	124	78-121
	1,2-Dichloropropane-d6	124	84-123
Y0MT6	Vinyl chloride-d3	142	49-138
	Chloroethane-d5	146	60-126
	1,2-Dichloroethane-d4	132	78-129

Detected results for affected analytes may be biased high. Where the results are nondetected, false negatives may exist. For DMC recoveries that are greater than the upper QC limits, only detected results for associated analytes are qualified.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

G. Sample Y0MT2 was reanalyzed at a 5-fold dilution due to the high level of trichloroethene in the original, undiluted analysis. The result for trichloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0MS5 was reanalyzed at a 2-fold dilution due to the high level of tetrachloroethene in the original, undiluted analysis. The result for tetrachloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

139699

SFUND RECORDS CTR
139699

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Nancy Riveland-Har, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105152165 Amendment 1

DATE: February 13, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	31171
SDG NO.:	Y0MX5
LABORATORY:	Datachem Laboratories, Inc. (DATAC)
ANALYSIS:	Volatiles
SAMPLES:	8 Water Samples
COLLECTION DATE:	November 25 through 26, 2002
REVIEWER:	Nanny Estrada, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Carol Beard, CLP PO USEPA Region 8
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105165-2435/31171/Y0MX5V.wpd

Data Validation Report

Case No.:	31171	SDG No.: Y0MX5
Site:	Omega Chem OU-2	
Laboratory:	Datachem Laboratories, Inc.	
Reviewer:	Nanny Estrada, ESAT/LDC	
Date:	February 13, 2003	

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0MX5, Y0MX6, Y0MX7, Y0MX8, Y0MX9, Y0MY0, Y0MY3 and Y0MY6
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLM04.2
Collection Date:	November 25 and 26, 2002
Sample Receipt Date:	November 26 and 29, 2002
Extraction Date:	Not Applicable
Analysis Date:	December 3 and 4, 2002

FIELD QC:

Trip Blanks (TB):	Y0MX7 and Y0MY6
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0MX8 and Y0MX9

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK01:	Y0MX5, Y0MX5DL, Y0MX7, Y0MX8, Y0MX8DL, Y0MX9, Y0MX9DL and Y0MY6
VBLK02:	Y0MX6, Y0MX6DL, Y0MY0, Y0MY0DL, Y0MY3, Y0MY3DL, VHBLK01, Y0MY3MS and Y0MY3MSD

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO ACTION:

None.

CLP PO ATTENTION:

Detected results and quantitation limits for acetone and chloroethane in some samples are qualified as estimated (J) due to calibration problems.

SAMPLING ISSUES:

1) A temperature of 8^0C was measured in the cooler containing samples Y0MY3 and Y0MY6 which were received at the laboratory on November 29, 2002. Since the temperature is $<10^0$C, no adverse effect on data quality is expected

2) There was no sample designated on the Traffic Report & Chain of Custody Records for MS/MSD analysis. The laboratory was instructed by the Sample Management Office (SMO) to select one sample (Y0MY3) and proceed with the analysis.

ADDITIONAL COMMENTS:

Although tetrachloroethene was found in trip blank Y0MY6 (collected on 11/26/03) at a concentration of 0.5 μg/L, the tetrachloroethene result for the associated sample Y0MY3 was not qualified as nondetected and estimated because the sample result exceeded 5 times the blank contamination.

Tentatively identified compounds were detected in the sample Y0MY2 (see attached Form 1F).

Manual integrations were performed on chlorobenzene in the calibration standards and on tetrachloroethene in samples Y0MX6 and Y0MY0 because the analytes were either not found or were incorrectly integrated by the automatic integration routine. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organics Analysis, OLM04.2, May 1999; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

I. Validation Summary

	Acceptable/Comment	
HOLDING TIMES/PRESERVATION	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	B
LABORATORY BLANKS	YES	
FIELD BLANKS	YES	
SURROGATES	YES	
MATRIX SPIKE/DUPLICATES	NO	C
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, D
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	YES	

N/A = Not Applicable

II. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibration, and are flagged "J" in Table 1A.

- Chloroethane and acetone in samples Y0MX5, Y0MX7, Y0MX8, Y0MX9, and Y0MY6 and method blank VBLK01

Percent differences exceeding the ±25.0% validation criterion were observed for the analytes listed above in the continuing calibration performed on December 3, 2002 (see Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

C. The matrix spike and matrix spike duplicate recoveries and relative percent differences (RPDs) for 1,1-dichloroethene in QC samples Y0MY3MS and Y0MY3MSD did not meet the criteria for accuracy and precision specified in the SOW. Percent recoveries and RPDs for 1,1-dichloroethene are presented below.

	Y0MY3MS	Y0MY3MSD		QC Limits	
Analyte	% Recovery	% Recovery	RPD	RPD	% Recovery
1,1-Dichloroethene	80	60	29	14	61-145

Results obtained may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis. The effect on data quality is not known.

D. Samples Y0MX5 and Y0MX6 were analyzed at two-fold dilution due to high levels of several analytes that exceeded the calibration range. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factor. In addition, these samples were reanalyzed at a 20-fold dilution due to high levels of 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted samples in Table 1A; results for all other analytes are reported from the two-fold diluted samples.

SampleY0MX8 and Y0MX9 were reanalyzed at 10-fold dilution due to high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

SampleY0MY0 was analyzed at 20-fold dilution due to high levels of several analytes that exceeded the calibration range. The CRQLs listed for this sample in Table 1A have been multiplied by the dilution factor. In addition, this sample was reanalyzed at a 200-fold

dilution due to the high level of tetrachloroethene that exceeded the calibration range. The result for tetrachloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the 20-fold diluted sample.

SampleY0MY3 was reanalyzed at a four-fold dilution due to the high levels of trichlorofluoromethane and 1,1,2-trichloro-1,2,2-trifluoroethane that exceeded the calibration range. Results for trichlorofluoromethane and 1,1,2-trichloro-1,2,2-trifluoroethane are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

SFUND RECORDS CTR
149022

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Nancy Riveland-Har, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105165 Amendment 1

DATE: February 27, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 Tier 3 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	31171
SDG NO.:	Y0MT8
LABORATORY:	Shealy Environmental Services, Inc. (SHEALY)
ANALYSIS:	Volatiles
SAMPLES:	11 Water Samples
COLLECTION DATE:	November 18 through 26, 2002
REVIEWER:	Nanny Estrada, ESAT/LDC

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Cecilia Moore, CLP PO USEPA Region 5
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105165-2427/31171/Y0MT8V.wpd

Data Validation Report

Case No.:	31171	SDG No.:	Y0MT8
Site:	Omega Chem OU-2		
Laboratory:	Shealy Environmental Services, Inc.		
Reviewer:	Nanny Estrada, ESAT/LDC		
Date:	February 27, 2003		

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0MT8, Y0MT9, Y0MW0, Y0MW1, Y0MX1, Y0MX2, Y0MX3, Y0MX4, Y0MY1, Y0MY2 and Y0MY4
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	November 18 through 26, 2002
Sample Receipt Date:	November 20 through 27, 2002
Extraction Date:	Not Applicable
Analysis Date:	November 27, 29 and 30, 2002

FIELD QC:

Trip Blanks (TB):	Y0MW1, Y0MX3 and Y0MY4
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0MX4
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK27:	Y0MT8DL, Y0MT9, Y0MW0 and Y0MW1
VBLK29:	Y0MY1, Y0MY1DL, Y0MW0DL, Y0MT8, Y0MX1, Y0MX4, Y0MY2, Y0MY4 and Y0MX2
VBLK30:	Y0MX3, Y0MX2DL, Y0MX1DL and Y0MY2DL
VBLK05:	VHBLK88

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

VHBLK - Storage Blank, DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) The detected result for methylene chloride in sample Y0MX1 is qualified as nondetected and estimated (U,J) due to a storage blank contamination.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside QC limits.

4) Detected results for trichloroethene and tetrachloroethene in sample Y0MT8 are qualified as estimated (J) due to high analyte concentrations.

SAMPLING ISSUES:

1) Detected results for carbon disulfide and chloroform in some samples are qualified as nondetected and estimated (U,J) due to trip blank and equipment blank contaminations.

2) Laboratory QC samples were designated for VOA, BNA and PEST on the Traffic Report & Chain of Custody Records. The laboratory's SDG Narrative states that "Per instruction from Region 9, lab QC is only needed for the PEST/PCB fraction."

ADDITIONAL COMMENTS:

Results reported for the 5-fold dilution of sample Y0MT8 differ widely from the undiluted sample results. The laboratory could not determine whether the sample vial for 5-fold dilution might have been switched with another sample when placed into the autosampler. There is no unused sample vial to do reanalysis. The screening data provided by the laboratory indicates a tetrachloroethene concentration of 670 ug/L, which is consistent with the undiluted result of 800 ug/L. Only the undiluted results for sample Y0MT8 are presented in Table 1A (see Comment G below for qualifications).

Other than laboratory artifacts/contaminants (approximate retention time = 5.3 minutes), a tentatively identified compound was detected in the sample Y0MY2 (see attached Form 1LCF).

Manual integrations were performed on some analytes in the calibration standards, samples, and method blanks due to poor response or incorrect auto integration. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program (CLP) Statement of Work for Organics Analysis,* OLC03.2, December 2000; and

- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES/PRESERVATION	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	C, D
CONTINUING CALIBRATIONS	NO	C, E
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS	NO	F
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
MATRIX SPIKE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	NO	A, G, H
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to storage blank, trip blank, and equipment blank contaminations, and are flagged "U,J" in Table 1A.

- Carbon disulfide in samples Y0MX1 and Y0MY2
- Methylene chloride in sample Y0MX1
- Chloroform in sample Y0MX1

Carbon disulfide was found in trip blanks Y0MX3 and Y0MY4 and equipment blank Y0MX4 at concentrations of 0.06 μg/L, 0.1 μg/L, and 0.7 μg/L, respectively. Methylene chloride was found in storage blank VHBLK88 at a concentration of 0.2 μg/L. Chloroform was found in equipment blank Y0MX4 at a concentration of 1 μg/L. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Methyl tert-butyl ether in samples Y0MT8 (0.9 μg/L), Y0MT9 (1 μg/L), and Y0MW0 (2 μg/L) and chloroform in sample Y0MW0 (0.6 μg/L) are not qualified as nondetected and estimated because they are not detected in the associated trip blank. The user should note that these analytes may be artifacts because they were found in equipment blank Y0MX4.

Although acetone was found in trip blanks Y0MW1 (23 μg/L), Y0MX3 (4 μg/L) and Y0MY4 (10 μg/L) and in equipment blank Y0MX4 (7 μg/L), no data are qualified because acetone was either not found in the samples or found in the samples at concentrations which exceeded 10 times the amount in trip blanks or equipment blank. Although toluene was found in trip blanks Y0MX3 (0.4 μg/L) and Y0MY4 (0.6 μg/L), no data are qualified because toluene was not found in the samples. Although tetrachloroethene was found in trip blank Y0MW1 (0.3 μg/L), no data are qualified because tetrachloroethene was found in the samples at concentrations which exceeded 5 times the amount in trip blank Y0MW1.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, 2-butanone, and 2-hexanone in all samples, method blanks, and storage blank VHBLK88
- Methyl acetate in method blank VBLK05 and storage blank VHBLK88
- 1,2-Dibromo-3-chloropropane in samples Y0MT8, Y0MX1, Y0MX2, Y0MX4, Y0MY1, Y0MY2, and Y0MY4, method blanks VBLK29 and VBLK05, and storage blank VHBLK88

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibrations performed on November 18 and 30, 2002 and December 4, 2002 (see Table 2). RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on November 27, 29, and 30, 2002 and December 5, 2002 (see Table 2).

Detected results for the analytes listed above should be considered as the minimum concentrations at which this analyte is present in the samples. Where the results are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

D. Detected results and quantitation limit for the following analytes are qualified as estimated due to large percent relative standard deviations (RSDs) in the initial calibrations, and are flagged "J" in Table 1A.

- Acetone, methyl acetate, methylcyclohexane, 1,2,4-trichlorobenzene, and 1,2,3-trichlorobenzene in sample Y0MX3 and method blank VBLK30
- 1,2-dibromo-3-chloropropane in samples Y0MT8, Y0MT9, Y0MW0, Y0MW1, Y0MX1, Y0MX2, Y0MX4, Y0MY1, Y0MY2, and Y0MY4 and method blanks VBLK27 and VBLK29
- Methyl acetate in method blank VBLK05 and storage blank VHBLK88

Percent RSDs exceeding the ≤30.0% validation criterion were observed for the analytes listed above in the initial calibrations performed on November 18 and 30, 2002 and December 4, 2002 (see Table 2).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Chloroethane, trichlorofluoromethane, 1,1-dichloroethene and 1,1,2-trichloro-1,2,2-trifluoroethane in samples Y0MT9, Y0MW0, and Y0MW1 and method blank VBLK27
- 1,2-dibromo-3-chloropropane, trans-1,2-dichloroethene, 1,1,2,2-tetrachloroethane and 1,2,3-trichlorobenzene in samples Y0MT8, Y0MX1, Y0MX2, Y0MX4, Y0MY1, Y0MY2, and Y0MY4 and method blank VBLK29
- Methyl acetate and methylcyclohexane in sample Y0MX3 and method blank VBLK30
- Dichlorodifluoromethane in samples Y0MT9, Y0MW0, and Y0MW1, method blanks VBLK27 and VBLK05, and storage blank VHBLK88

Percent differences exceeding the ±30% validation criterion were observed in the continuing calibrations performed on November 27, 29, and 30, 2002 and December 5, 2002 (see Table 2).

The continuing calibration checks the instrument's performance daily and produces relative response factors (RRFs) for target analytes that are used for quantitation..

F. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{2-Hexanone-d5}
- 4-Methyl-2-pentanone and 2-hexanone in sample Y0MT9

{1,1-Dichloroethene-d2}
- cis-1,2-Dichloroethene in sampleY0MW0

{Chloroform-d}
- Choroform in sampleY0MY1

DMC recoveries outside QC limits are shown below.

Sample	Surrogate	% Recovery	QC Limits
Y0MT9	2-Hexanone-d5	30	37-169
Y0MW0	1,1-Dichloroethene-d2	136	65-130
Y0MW1	1,2-Dichloroethane-d4	132	78-129
Y0MY1	1,1-Dichloroethene-d2	150	65-130
	Chloroform-d	128	80-123
Y0MY2	1,1-Dichloroethene-d2	220	65-130
Y0MY4	Bromoform-d	152	76-135
Y0MX2	Bromoform-d	136	76-135

Detected results for affected analytes may be biased high. Where the results are nondetected, false negatives may exist. For DMC recoveries that are greater than the upper QC limits, only detected results for associated analytes are qualified.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

G. Detected results for the following analytes are qualified as estimated due to high analyte concentrations, and are flagged "J" in Table 1A.

- Trichloroethene and tetrachloroethene for sample Y0MT8

Concentrations of trichloroethene and tetrachloroethene in the undiluted analysis of sample Y0MT8 were 77 μg/L and 800 μg/L, respectively. These values exceed the 0.5 - 25 ug/L calibration range. The laboratory reanalyzed sample Y0MT8 at 5-fold dilution, but the results differ widely from the undiluted results (see Additional Comment section above).

Results reported in Table 1A for these analytes are from the undiluted sample. These concentrations are considered to be qualitatively acceptable but quantitatively questionable and should be considered as the minimum concentrations at which the analytes are present in the sample.

H. Samples Y0MW0 and Y0MX1 were reanalyzed at 2-fold and 5-fold dilutions, respectively, due to high levels of tetrachloroethene in the original, undiluted analysis. Results for tetrachloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0MY1 was reanalyzed at a 5-fold dilution due to high levels of chloroform and trichloroethene in the original, undiluted analysis. Results for trichloroethene and chloroform are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0MY2 was reanalyzed at a 10-fold dilution due to high levels of 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, acetone and tetrachloroethene in the original, undiluted analysis. Results for 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, acetone and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0MX2 was reanalyzed at a 10-fold dilution due to high levels of trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane and tetrachloroethene in the original, undiluted analysis. Results for trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

B0101169

Author: Richard Bauer/R9/USEPA/US **Date:** 02/12/2003 01:27 PM

TECHNICAL DIRECTION FORM # B0101169

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 2/12/03

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate, TOC, anions (Cl, SO4), sulfide, alkalinity, NO2+NO3,
R03S34	water	up to 40

Instructions: Analyze up to 40 water samples for perchlorate, TOC, anions (Cl, SO4), sulfide, alkalinity, and NO2+NO3 following R9 Lab SOPs for method 314.0, 415.1, 300.0, 376.1, 2320, and 353.2.

Deliverables	**Due Dates**
[x] Complete Data Package	**20** days from receipt of last sample in each SDG
[ ] Preliminary Report	
[x] Analytical Report including each SDG WordPerfect & Excel files on diskette	**20** days from receipt of last sample in
[ ] .csv EDD file	

Site Location:	Whittier, CA	EPA Program:	Superfund
Site Phase:	RI/FS	Operable Unit #:	00
CERCLIS #:	CAD042245001	GPRA #:	
SSID #:	BC	Program Type:	
Site Notes:	Loren Henning will be managing project while Nancy Riveland-Har is on detail.		
EPA RPM:	Loren Henning	SFD-7-4	415-972-3164

Sampling Dates: 02/17 - 03/04/03

Contractor and Sampler Information

CONTRACTOR AND SAMPLER INFORMATION :

Sampler Name:	Bill Clarke
Company:	Weston Solutions, Inc.
Office Phone Number:	818 382-1806
Fax Number:	818 382-1801
Mobile Phone Number:	818 599-6468
Email:	bill.clarke@westonsolutions.com
Office Address:	14724 Ventura Blvd. Suite 1000 Sherman Oaks, CA 91403

Analysis

ANALYSIS:

# of Samples	Matrix	Compounds/Analytes	Method	Lab Assignment	Case Number
21	Water	CLPAS VOCs - LOW	OLC03.2	CLP	
21	Water	CLPAS VOCs -Higher	OLM04.2	CLP	
31	Water	CLPAS Total Metals	ILM04.1	CLP	
31	Water	CLPAS Dissolved Metals	ILM04.1	CLP	
31	Water	Total Cyanide	ILM04.1	CLP	
15	Water	1,4-Dioxane	CLP Flex (8270C w/ SIM)	CLP	
42	Water	Methane, Ethane, Ethene	RSK 175	EMAX	
31	Water	Total Organic Carbon	EPA 415.1	EPA Region 9 Lab	R03S34
31	Water	Total Dissolved Solids	EPA 160.1	EPA Region 9 Lab	R03S34
31	Water	Anions (Cl, SO4)	EPA 300.0	EPA Region 9 Lab	R03S34

31	Water	Sulfide	EPA 376.1	EPA Region 9 Lab	R03S34
31	Water	Alkalinity	SM 2320	EPA Region 9 Lab	R03S34
31	Water	Perchlorate	EPA 314.0	EPA Region 9 Lab	R03S34
31	Water	Nitrate/Nitrite as N	EPA 353.2	EPA Region 9 Lab	R03S34

CLP #'s organics: Y0TP0 - Y0TT9, inorganics: MY0TE0 - MY0TL9

Turn Around Times:

21 days for EDD or faxed HCDD.

Supplemental Analysis Information:

1. VOC DLs 1 ug/L where possible.
2. 1,4-Dioxane DL 2 ug/L.
3. For 1,4-Dioxane analysis: Anticipate dilutions for one sample with concentration > 10,000 ug/L and one sample with concentration > 250 ug/L.
4. For VOC analysis: Anticipate dilutions for approximately 3 samples with individual analytes > 10,000 ug/L, approximately 6 samples with individual analytes > 1,000 ug/L, and approximately 7 samples with individual analytes > 200 ug/L.
5. Sampler will note samples requiring dilutions on COCs/TRs.

Lab Assignments Forwarded

Data Validation

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level	Validation Company	Due Date
VOCs	2	100%		
Metals	1A	100%		
Total Cyanide	1A	100%		
1,4-Dioxane	1A	100%		
Methane, Ethane, Ethene	1A	100%		
Total Organic Carbon	1A	100%		
Total Dissolved Solids	1A	100%		
Anions (Cl, SO4)	1A	100%		
Sulfide	1A	100%		
Alkalinity	1A	100%		
Perchlorate	1A	100%		

Nitrate/Nitrite as N	1A	100%	Validation Received
Supplemental Data Validation Information : 1. VOCs are primary compounds of concern, particularly PCE and its degradation products, Freons, and to a lesser extent, aromatic compounds (BTEX).			Validation Forwarded

TECHNICAL DIRECTION NO. B0105178 Amendment 2

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE:** ~~3-13-03~~ ~~4-2-03~~ 4-10-03

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Amendment 2 : add fixed gases; Tier 1A, due date 5-6-03.
Case# 11-BCC0-51.0 Data type RSK-175
SDG# 03B-140,155,162,166,177&188 and 03C008
Laboratory EMAX [ ] EPA-Lead Non-CLP [X] REAP EMAX
Table 1A not requested.

1Q03Reg9TR.xml

Amendment 1: Add SDGs Y0TQ5 and Y0TR4; extend due date to 4-18-03.

Y0TQ5.WK4 Y0TR4.WK4

Data Package Information **Project Information:**
Case# 31445 Data type VO, 1,4-dioxane EPA Site Manager Diane Strassmeier SDG# Y0TP6, TP8, TQ0 & TQ5; Mail Code SFD-7-4 TP9 & TR4 (1,4-diox)

Laboratory Liberty [ ] EPA-Lead Non-CLP [ ] REAP EMAX

Y0TP6.WK4 Y0TP8.WK4 Y0TQ0.WK4 Y0TP9.WK4

Level of Review:
Tier 3: volatiles focusing on PCE and its degradation products, freons, and BTEX.
Tier 1A: 1,4-dioxane

Deliverable	**Due date**	
[X] Validation Reports, organics	4-18-03	~~4-11-03~~
[X] Tier 1A report, gases	5-6-03	

Pkgs to ESAT: 3/14 & 4/4
VO Y0TP6: 10W; TP8:12W; TQ0:7W; TQ5:10W
1,4-dioxane TP9:10W; TR4:5W
Complete: Rec: Transmit:

SFUND RECORDS CTR
149037

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Diane Strassmeier, Remedial Project Manager
Site Cleanup Section, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68W01040
Task Order No.: B01
Technical Direction No.: B0105178 Amendment 1

DATE: April 16, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 Tier 3 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	31445
SDG NO.:	Y0TP6
LABORATORY:	Liberty Analytical (LIBRTY)
ANALYSIS:	Volatiles
SAMPLES:	10 Water Samples
COLLECTION DATE:	February 24 through March 3, 2003
REVIEWER:	Nanny Estrada, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.:	31445	SDG No.: Y0TP6
Site:	Omega Chem OU-2	
Laboratory:	Liberty Analytical	
Reviewer:	Nanny Estrada, ESAT/LDC	
Date:	April 16, 2003	

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0TP1, Y0TP5, Y0TP6, Y0TP7, Y0TQ8, Y0TQ9, Y0TR1, Y0TR3, Y0TR4, and Y0TR5
Concentration and Matrix:	Low Level Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	February 24 through March 3, 2003
Sample Receipt Date:	February 26 and 27 and March 4, 2003
Extraction Date:	Not Applicable
Analysis Date:	March 3 through 5, 2003

FIELD QC:

Trip Blanks (TB):	Y0TP1, Y0TP5, Y0TP7, and Y0TQ8
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKER:	Y0TP1, Y0TQ8, Y0TQ9, and Y0TR1
VBLKCP:	Y0TP6, Y0TP7, Y0TR5, Y0TR4, Y0TR3, and Y0TR1DL
VBLKCQ:	Y0TP5
VBLKBT:	VHBLKBR

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

VHBLK - Storage Blank, DL - Dilution

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for several analytes are qualified as nondetected and estimated (U,J) due to method blank and trip blank contaminations.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recoveries outside QC limits.

SAMPLING ISSUES:

1) Detected results for several analytes are qualified as nondetected and estimated(U,J) due to contamination in trip blanks Y0TP1, Y0TQ8 and Y0TP7.

2) Sample Y0TP6 was designated for "laboratory QC" on the Traffic Report & Chain of Custody Record (TR/COC). Per previous instruction from Region 9, laboratory quality control is not needed for the VOA fraction. The matrix spike/matrix spike duplicate analysis were not performed.

ADDITIONAL COMMENTS:

Other than laboratory artifacts (retention times = 3.76, 5.89, 7.63, 9.93, 11.7, 12.3, 14.5, 15.7, and 17.0 minutes), tentatively identified compounds (TICs) were not found in the samples.

Manual integrations were performed on some analytes in the initial and continuing calibrations because the analyte was either not found or was incorrectly integrated by the automatic integration routine. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile Data Packages*;
- *USEPA Contract Laboratory Program (CLP) Statement of Work for Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	C, D
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS	NO	E
LABORATORY CONTROL SAMPLE/DUPLICATE	N/A	
MATRIX SPIKE/MATRIX SPIKE DUPLICATE	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, F, G
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank and trip blank contamination, and are flagged "U,J" in Table 1A.

- Acetone in samples Y0TP1, Y0TP6, Y0TQ8, Y0TQ9, Y0TR1, and Y0TR4
- 2-Butanone in samples Y0TQ9 and Y0TR1
- Bromoform in samples Y0TP1 and Y0TP6
- Chloroform in samples Y0TP6, Y0TQ9, Y0TR1, Y0TR3, Y0TR4, and Y0TR5
- Trichloroethene in sample Y0TP5 and storage blank VHBLKBR
- cis-1,3-Dichloropropene in all samples and storage blank VHBLKBR
- 4-Methyl-2-pentanone in sample Y0TR5
- Tetrachloroethene and 1,4-Dichlorobenzene in sample Y0TP6
- Chloromethane, toluene, tetrachloroethene, ethylbenzene, and total xylenes in storage blank VHBLKBR

Acetone was found in storage blank VHBLKBR at a concentration of 3 μg/L. 2-Butanone was found in trip blanks Y0TP1 and Y0TQ8 at concentrations of 4 μg/L and 3 μg/L , respectively. Bromoform was found in method blanks VBLKER, VBLKCP, and VBLKCQ and storage blank VHBLKBR at concentrations of 0.2 μg/L, 0.07 μg/L, 0.06 μg/L, and 0.08 μg/L, respectively Chloroform was found in trip blanks Y0TP1, Y0TP5, Y0TP7, and Y0TQ8 at concentrations of 0.5 μg/L, 0.5 μg/L, 0.5 μg/L, and 0.5 μg/L, respectively. Trichloroethene was found in method blanks VBLKCQ and VBLKBT at concentrations of 0.2 μg/L and 0.07 μg/L, respectively. cis-1,3-Dichloropropene was found in method blanks VBLKER, VBLKCP, VBLKCQ, and VBLKBT at concentrations of 0.09 μg/L, 0.08 μg/L, 0.08 μg/L, and 0.08 μg/L, respectively. 4-Methyl-2-pentanone was found in method blanks VBLKCP and VBLKER at concentrations of 0.4 μg/L and 0.3 μg/L, respectively. Tetrachloroethene was found in method blanks VBLKBT, VBLKCP, and VBLKCQ and in trip blank Y0TP1at concentrations of 0.04 μg/L, 0.08 μg/L, 0.07 μg/L, and and 0.04 μg/L, respectively. 1,4-Dichlorobenzene was found in method blanks VBLKCP and VBLKCQ at concentrations of 0.04 μg/L and 0.05 μg/L, respectively. Chloromethane, toluene, ethylbenzene, and total xylenes were found in method blank VBLKBT at concentrations of 0.4 μg/L, 0.06 μg/L, 0.09 μg/L, and 0.07 μg/L, respectively. Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Trichloroethene and tetrachloroethene detected in samples Y0TQ9, Y0TR1, Y0TR3, Y0TR4, and Y0TR5 are not qualified as nondetected and estimated since their concentrations exceed 5 times the amount in the associated method blanks.

Chloromethane found in samples Y0TP6 (0.07 μg/L), Y0TQ9 (0.05 μg/L), Y0TR1 (0.1 μg/L), and Y0TR3 (0.08 μg/L) and toluene found in samples Y0TP6 (0.03 μg/L), Y0TR1 (0.04 μg/L), and Y0TR4 (0.1 μg/L) are not qualified as nondetected and estimated because they are not detected in the associated method blank and trip blank. The user should note that these analytes may be artifacts because they were found in other method blanks and trip blanks.

Carbon disulfide was found in trip blank Y0TQ8 (0.07 μg/L); methylene chloride was found in trip blanks Y0TP5 (0.07 μg/L) and Y0TQ8 (0.07 μg/L); 1,3-dichlorobenzene was found in method blanks VBLKCP (0.05 μg/L) and VBLKCQ (0.04 μg/L). No data are qualified because these analytes were not detected in the associated samples.

A laboratory method blank is laboratory reagent water, analyzed with all reagents, surrogates, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- Acetone and 2-butanone in all samples, method blanks, and storage blank VHBLKBR

Average RRFs below the 0.05 validation criterion were observed for the analytes listed above in the initial calibration performed on March 3, 2003 (see Table 2). RRFs below the 0.05 validation criterion were observed for the analytes listed above in the continuing calibrations performed on March 3, 4 and 5, 2003 (see Table 2). Detected results for the analytes listed above should be considered as the minimum concentrations at which these analytes are present in the samples. Where the results are nondetected, false negatives may exist.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

D. Detected results and quantitation limits for the following analyte are qualified as estimated due to a large percent relative standard deviation (RSD) in the initial calibration, and are flagged "J" in Table 1A.

- Bromomethane in all samples, method blanks, and storage blank VHBLKBR

Percent RSDs exceeding the ≤30.0% validation criterion were observed for the analyte listed above in the initial calibration performed on March 3, 2003 (see Table 2).

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analytes are estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{Chloroethane-d5}
Dichlorodifluoromethane, chloromethane, bromomethane, chloroethane, and carbon disulfide in samples Y0TP1, Y0TQ8, Y0TQ9, and Y0TR1

{1,2-Dichloropropane-d6}
Cyclohexane, methylcyclohexane, 1,2-dichloropropane, and bromodichloromethane in sample Y0TP5

DMC recoveries outside QC limits are shown below.

Sample	DMC	% Recovery	QC Limits
Y0TP1	Chloroethane-d5	42	60-126
Y0TQ8	Chloroethane-d5	54	60-126
Y0TQ9	Chloroethane-d5	52	60-126
Y0TR1	Chloroethane-d5	40	60-126
Y0TP5	1,2-Dichloropropane-d6	80	84-123

Detected results for affected analytes may be biased low. Where the results are nondetected, false negatives may exist.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with surrogates prior to purging. Surrogates provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

F. Sample Y0TR4 was analyzed at a 3.6-fold dilution due to high levels of target analytes. The CRQLs listed for this sample in Table 1A have been multiplied by the dilution factor.

G. Sample Y0TR1 was reanalyzed at a 12.5-fold dilution due to the high level of tetrachloroethene that exceeded the calibration range. The result for tetrachloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

SFUND RECORDS CTR
149105

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Diane Strassmeier, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105178 Amendment 1

DATE: April 17, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	31445
SDG NO.:	Y0TP8
LABORATORY:	Liberty Analytical (LIBRTY)
ANALYSIS:	Volatiles
SAMPLES:	12 Water Samples
COLLECTION DATE:	February 18 through 21, 2003
REVIEWER:	Nanny Estrada, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105178-2675/31445/Y0TP8V.wpd

Data Validation Report

Case No.:	31445	SDG No.: Y0TP8
Site:	Omega Chem OU-2	
Laboratory:	Liberty Analytical	
Reviewer:	Nanny Estrada, ESAT/LDC	
Date:	April 17, 2003	

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0TP8, Y0TP9, Y0TQ1, Y0TR6, Y0TR7, Y0TR8, Y0TR9 Y0TS1, T0TS4, Y0TS5, Y0TS6 and Y0TT1
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLM04.2
Collection Date:	February 18 through 21, 2003
Sample Receipt Date:	February 19, 21 and 25, 2003
Extraction Date:	Not Applicable
Analysis Date:	February 27 and 28, 2003

FIELD QC:

Trip Blanks (TB):	Not Provided
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0TP8 and Y0TP9
Field Duplicates (D2):	Y0TS4 and Y0TS5

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKCJ:	Y0TP8, Y0TP8DL, Y0TP9, Y0TQ1, Y0TR8 and Y0TR9
VBLKCK:	Y0TS1, Y0TS4, Y0TS5, Y0TS6, Y0TR7, Y0TS6DL, Y0TS5DL, Y0TS4DL, Y0TR8DL, Y0TQ1DL, Y0TR9DL, Y0TS1DL, Y0TT1 and Y0TR6
VBLKCL:	VHBLKCJ

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected result for 1,2,4-trichlorobenzene in sample Y0TP8 is qualified as nondetected and estimated (U,J) due to a method blank contamination.

2) Detected results and quantitation limits for acetone, 2-butanone and 2-hexanone are qualified as estimated (J) due to calibration problems.

SAMPLING ISSUES:

1) Detected result for methylene and chloroform in some samples are qualified as nondetected and estimated (U,J) due to trip blank and equipment blank contaminations.

2) Airbills between organics and inorganics shipments were switched. FedEx account number was provided to the laboratories to forward the coolers to the proper laboratories.

3) Sample Y0TS3 was designated for "laboratory QC" on the Traffic Report & Chain of Custody Record (TR/COC). The SDG Narrative states that "No duplicate matrix spikes were generated per client request."

ADDITIONAL COMMENTS:

Results for trip blanks Y0TQ0, Y0TS9 and Y0TS7 (collected on February 18, 19 and 21, 2003, respectively) and equipment blank Y0TT0 (collected on February 21, 2003) are located in Case 31445, Sample Delivery Group (SDG) Y0TQ0.

Other than laboratory artifacts (retention time = 16.2 minutes), tentatively identified compounds (TICs) were found in the sample Y0TS6 (see attached Form 1F).

Manual integrations were performed on some analytes in the initial and continuing calibration standards because the analyte was either not found or was incorrectly integrated by the automatic integration routine. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organics Analysis, OLM04.2*, May 1999; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
SYSTEM MONITORING COMPOUNDS	YES	
MATRIX SPIKE/DUPLICATES	N/A	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, E, F
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	NO	D

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank, trip blank and equipment blank contamination, and are flagged "U,J" in Table 1A.

- 1,2,4-Trichlorobenzene in sample Y0TP8
- Methylene chloride in samples Y0TP9, Y0TQ1, Y0TR6, Y0TR7, Y0TR8, Y0TR9, Y0TS4, Y0TS5 and Y0TS6
- Chloroform in samples Y0TR9 and Y0TS6

1,2,4-Trichlorobenzene was found in method blanks VBLKCJ, VBLKCK and VBLKCL at concentrations of 0.2 μg/L, 0.2 μg/L, and 0.1 μg/L, respectively. Methylene chloride was found in trip blanks Y0TQ0, Y0TS9, Y0TS7, and equipment blank Y0TT0 at concentrations of 0.1 μg/L, 0.1 μg/L, 0.1 μg/L, and 0.2 μg/L, respectively (see SDG Y0TQ0). Chloroform was found in trip blanks Y0TQ0, Y0TS9, and Y0TS7 at concentrations of 0.6 μg/L, 0.4 μg/L, and 0.5 μg/L, respectively (see SDG Y0TQ0). Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater

than the CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Tetrachloroethene detected in all samples, methylene chloride detected in sample Y0TT1 and chloroform detected in samples Y0TP8, Y0TP9, Y0TQ1, Y0TS4, Y0TS5, and Y0TT1 are not qualified as nondetected and estimated since their concentrations exceed 5 times the amount in the associated trip blanks.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, 2-butanone, and 2-hexanone in samples Y0TR6, Y0TR7, Y0TS1, Y0TS4, Y0TS5, Y0TS6, and Y0TT1, method blanks VBLKCK and VBLKCL, and storage blank VHBLKCJ

Percent differences exceeding the ±25.0% validation criterion were observed for the analytes listed above in the continuing calibrations performed on Feburary 27 and 28, 2003 (see Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

D. In the analysis of the field duplicate pairs, the following outliers were obtained for the analytes listed below.

Analyte	Y0TP8 (D1) Conc., µg/L	Y0TP9 (D1) Conc., µg/L	RPD
Bromomethane	1L	50U	N/A
1,1,2-Trichloro-1,2,2-trifluoromethane	430	560	26
Tetrachloroethene	310	580	61

Analyte	Y0TS4 (D2) Conc., µg/L	Y0TS5 (D2) Conc., µg/L	RPD
Acetone	13	10U	N/A
1,1,1-Trichloroethane	0.6L	10U	N/A
1,2-Dichloroethane	10U	2L	N/A

A relative percent difference (RPD) value is not calculated and is presented above as "N/A" when an analyte is detected in a sample but is nondetected (U) at the CRQL in the associated field duplicate sample, or when an analyte is detected below the CRQL in both field duplicate samples. The effect on data quality is not known.

RPDs of 26% and 61% were obtained for 1,1,2-trichloro-1,2,2-trifluoromethane and tetrachloroethene in the analysis of field duplicate samples Y0TP8 and Y0TP9. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. Imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, method defects, or poor sampling or analytical technique.

E. Samples Y0TP8, Y0TP9, Y0TQ1, Y0TR6, Y0TR8, Y0TR9, and Y0TT1 were analyzed at 2.5-fold, 5.0-fold, 5.0-fold, 1000-fold, 5.0-fold, 5.0-fold, and 167-fold dilutions, respectively, due to high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factor.

F. Samples Y0TP8, Y0TR8 and Y0TR9 were reanalyzed at 3.3-fold, 16.7-fold and 20-fold dilutions, respectively, due to the high level of tetrachloroethene that exceeded the calibration range. Results for tetrachloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the initial diluted samples.

Sample Y0TQ1 was reanalyzed at a 14.3-fold dilution due to high levels of 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted sample; results for all other analytes are reported from the initial 5-fold diluted sample. The user should note that the 5-fold dilution results and the 14.3-fold dilution results differ significantly for trichlorofluoromethane (460 ug/L and 79 ug/L), 1,1-dichloroethene (1400 ug/L and 560 ug/L), 1,1,2-trichloro-1,2,2-trifluoroethane (1300 ug/L and 100 ug/L), trichloroethene (440 ug/L and 280 ug/L), and tetrachloroethene (1500 ug/L and 840 ug/L).

Sample Y0TS1 was reanalyzed at a 2.5-fold dilution due to the high level of acetone that exceeded the calibration range. The result for acetone is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Samples Y0TS4 and Y0TS5 were analyzed at 10-fold dilutions due to high levels of 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0TS6 was reanalyzed at a 5-fold dilution due to the high level of trichlorofluoromethane and 1,1,2-trichloro-1,2,2-trifluoroethane that exceeded the calibration range. Results for trichlorofluoromethane and 1,1,2-trichloro-1,2,2-trifluoroethane are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

SFUND RECORDS CTR
149106

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Diane Strassmeier, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105178 Amendment 1

DATE: April 18, 2003

SUBJECT: Tier 1A Cover Memo for Omega Chem OU-2 Superfund Site, Case No. 31445, SDG No. Y0TP9, 10 Water Samples for 1,4-Dioxane by CLP SOW OLC03.2 Flexibility Clause R9021403.

A limited evaluation of the data package was performed to identify any key analytical issues/deficiencies affecting data quality. This evaluation approach is employed when in-depth data review is not required as indicated by the data user.

The evaluation included: a review of the data package for completeness; review of the chain-of-custody forms (against laboratory reported information, for signatures, for sample condition upon receipt by the laboratory and for sample preservation); review of holding times; review of QC summaries; review of blanks for contamination; review of standards data; random check of reported results against raw data; random check of raw data for interference problems or system control problems (e.g. baseline anomalies, baseline drifts, etc.).

Field duplicate sample pairs Y0TP8/Y0TP9 and Y0TS4/Y0TS5 were also reviewed. 1,4-Dioxane was found in the field duplicate pair Y0TP8 and Y0TP9 at concentrations of 13 ug/L and 15 ug/L, respectively. 1,4-Dioxane was found in the field duplicate pair Y0TS4RE and Y0TS5 at concentrations of 6 ug/L each; however, 27 ug/L was found in the initial analysis of sample Y0TS4 (see Comment D below).

The following data quality issues should be noted:

A. Quantitation limits for the following analyte are qualified as estimated due to low area counts, method blank contamination, and questionable signal to baseline ratios, and are flagged "J" in Table 1A. The quantitation limit for 1,4-dioxane has been increased from 0.5 ug/L to 1 ug/L.

- 1,4-Dioxane in all method blanks and storage blank VHBLKAT

The quantitation limit for 1,4-dioxane was increased from 0.5 ug/L to 1 ug/L due to low area counts in the initial calibration, method blank contamination in the analytical system possibly due to low-level carryover, and questionable signal to baseline ratios in the initial calibration.

Area counts and signal to baseline ratios for the lowest standard (0.5 ug/L) were evaluated and determined to be unacceptable. The area count for the 0.5 ug/L standard is only 49 and the area count for 1 ug/L standard is only 90 (see attached quantitation reports). Method detection limit study data are not provided for review. The surrogate used (1,2-dichloroethane-d4) is not similar to 1,4-dioxane in chemical composition and behavior. Matrix spike/matrix spike duplicate (MS/MSD) samples were not analyzed. In addition, concentrations ranging from 0.4 ug/L to 0.9 ug/L of 1,4-dioxane were reported for all method blanks and the storage blank.

1,4-Dioxane does not purge efficiently from aqueous samples. To attain a more reliable quantitation at 1 ug/L, the reviewer recommends solvent extraction as performed for semivolatile analysis with selective ion monitoring (SIM). 1,4-Dioxane-d4 should be used as the surrogate.

The laboratory reported low concentrations of 1,4-dioxane for method blanks VBLKAT (0.4 ug/L), VBLKAU (0.8 ug/L), and VBLKAV (0.9 ug/L), and storage blank VHBLKAT (0.7 ug/L). These low concentrations are due to either instrument noise or very low signals from 1,4-dioxane. The low concentrations reported by the laboratory are below the revised quantitation limit of 1 ug/L and are presented in Table 1A as 1U (i.e., non-detects with a quantitation limit of 1 ug/L).

B. Detected results and quantitation limits for the following analyte are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- 1,4-Dioxane in all samples, all method blanks, and storage blank VHBLKUU

An average RRF of 0.017 (calculated from RRFs of the 1 ug/L, 5 ug/L, 10 ug/L, and 25 ug/L standards) was observed for 1,4-dioxane in the initial calibration performed on February 28, 2003. RRFs of 0.018, 0.018, and 0.013 were observed for 1,4-dioxane in the continuing calibrations performed on February 28 and March 3 and 4, 2003, respectively. These values are below the 0.05 validation criterion.

Detected results for 1,4-dioxane should be considered as the minimum concentrations at which this analyte is present in the samples. Where the results are nondetected, false negatives may exist.

C. Samples Y0TQ1, Y0TR6, Y0TR7, Y0TS1, and Y0TT1 were re-analyzed at 5.0-fold, 12500-fold, 2.5-fold, 5.0-fold, and 125-fold dilutions, respectively, due to high levels of 1,4-dioxane that exceeded the calibration range. Results for these samples are reported from the diluted analyses in Table 1A.

The users should note that concentrations of 1,4-dioxane differ greatly between the undiluted and diluted analyses of samples Y0TR7 (440 ug/L and 17 ug/L) and Y0TS1 (67 ug/L and 4 ug/L). The 1,4-dioxane found in the undiluted analysis of samples Y0TR7 and Y0TS1 may be partially due to carry-over from sample Y0TR6 (100000 ug/L). An instrument blank was not analyzed after sample Y0TR6.

D. Sample Y0TS4 was re-analyzed (undiluted) due to high level of 1,4-dioxane that exceeded the calibration range. The result for this sample is reported from the re-analysis in Table 1A.

The users should note that concentrations of 1,4-dioxane differ greatly between the initial analysis and the re-analysis of sample Y0TS4 (27 ug/L and 6 ug/L). The 1,4-dioxane detected in the initial analysis of sample Y0TS4 may be partially due to carry-over from sample Y0TT1 (1700 ug/L). An instrument blank was not analyzed after sample Y0TT1.

Additional Comments:

Matrix spike/matrix spike duplicate (MS/MSD) samples were not analyzed.

A Tier 1A Table 1A is attached.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment.

SFUND RECORDS CTR
149107

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Diane Strassmeier, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order No.: B01
Technical Direction No.: B0105178 Amendment 2

DATE: April 22, 2003

SUBJECT: Tier 1A Cover Memo for Omega Chem OU-2 Superfund Site, Case No. 31445, SDG No. Y0TR4, 5 Water Samples for 1,4-Dioxane by CLP SOW OLC03.2 Flexibility Clause R9021403.

A limited evaluation of the data package was performed to identify any key analytical issues/deficiencies affecting data quality. This evaluation approach is employed when in-depth data review is not required as indicated by the data user.

The evaluation included: a review of the data package for completeness; review of the chain-of-custody forms (against laboratory reported information, for signatures, for sample condition upon receipt by the laboratory and for sample preservation); review of holding times; review of QC summaries; review of blanks for contamination; review of standards data; random check of reported results against raw data; random check of raw data for interference problems or system control problems (e.g. baseline anomalies, baseline drifts, etc.).

There are no field duplicate samples and field blanks in this sample delivery group (SDG).

The following data quality issues should be noted:

A. Quantitation limits for the following analyte are qualified as estimated due to low area counts, method blank contamination, and questionable signal to baseline ratios, and are flagged "J" in Table 1A. The quantitation limit for 1,4-dioxane has been increased from 0.5 ug/L to 1 ug/L.

- 1,4-Dioxane in all method blanks and storage blank VHBLKDE

The quantitation limit for 1,4-dioxane was increased from 0.5 ug/L to 1 ug/L due to low area counts in the initial calibration, method blank contamination in the analytical system possibly due to low-level carryover, and questionable signal to baseline ratios in the initial calibration.

Area counts and signal to baseline ratios for the lowest standard (0.5 ug/L) were evaluated and determined to be unacceptable. The area count for the 0.5 ug/L standard is only 49 and the area count for 1 ug/L standard is only 90 (see attached quantitation reports). Method detection limit study data are not provided for review. The surrogate used (1,2-dichloroethane-d4) is not similar to 1,4-dioxane in chemical composition and behavior. In addition, concentrations ranging from 0.4 ug/L to 0.9 ug/L of 1,4-dioxane were reported for all method blanks and the storage blank.

1,4-Dioxane does not purge efficiently from aqueous samples. To attain a more reliable quantitation at 1 ug/L, the reviewer recommends solvent extraction as performed for semivolatile analysis with selective ion monitoring (SIM). 1,4-Dioxane-d4 should be used as the surrogate.

The laboratory reported low concentrations of 1,4-dioxane for method blanks VBLKDE (0.3 ug/L) and VBLKDG (0.6 ug/L) and storage blank VHBLKDE (0.3 ug/L). T ese low concentrations are due to either instrument noise or very low signals from 1,4-dioxane. The low concentrations reported by the laboratory are below the revised quantitation limit of 1 ug/L and are presented in Table 1A as 1U (i.e., non-detects with a quantitation limit of 1 ug/L).

B. Detected results and quantitation limits for the following analyte are qualified as estimated due to low relative response factors (RRFs) in the initial and continuing calibrations, and are flagged "J" in Table 1A.

- 1,4-Dioxane in all samples, all method blanks, and storage blank VHBLKUU

An average RRF of 0.017 (calculated from RRFs of the 1 ug/L, 5 ug/L, 10 ug/L, and 25 ug/L standards) was observed for 1,4-dioxane in the initial calibration performed on February 28, 2003. RRFs of 0.012 and 0.021 were observed for 1,4-dioxane in the continuing calibrations performed on March 5 and 7, 2003, respectively. These values are below the 0.05 validation criterion.

Detected results for 1,4-dioxane should be considered as the minimum concentrations at which this analyte is present in the samples. Where the results are nondetected, false negatives may exist.

C. Samples Y0TP4 and Y0TQ3 were re-analyzed at 35.7-fold and 3.6-fold dilutions, respectively, due to high levels of 1,4-dioxane that exceeded the calibration range. Results for these samples are reported from the diluted analyses in Table 1A.

The users should note that concentrations of 1,4-dioxane differ greatly between the undiluted and diluted analyses of sample Y0TP4 (510 ug/L and 180 ug/L).

Additional Comments:

Matrix spike/matrix spike duplicate (MS/MSD) samples were not analyzed.

A Tier 1A Table 1A is attached.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment.

SFUND RECORDS CTR
149108

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Diane Strassmeier, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105178 Amendment 2

DATE: April 22, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	31445
SDG NO.:	Y0TQ0
LABORATORY:	Liberty Analytical (LIBRTY)
ANALYSIS:	Volatiles
SAMPLES:	7 Water Samples
COLLECTION DATE:	February 18 through 21, 2003
REVIEWER:	Kendra DeSantolo, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105178-2698/31445/Y0TQ0V.wpd

Data Validation Report

Case No.:	31445	SDG No.:	Y0TQ0
Site:	Omega Chem OU-2		
Laboratory:	Liberty Analytical		
Reviewer:	Kendra DeSantolo, ESAT/LDC		
Date:	April 22, 2003		

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0TQ0, Y0TQ2, Y0TS3, Y0TS7, Y0TS8, Y0TS9 and Y0TT0
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	February 18 through 21, 2003
Sample Receipt Date:	February 19, 21, and 25, 2003
Extraction Date:	Not Applicable
Analysis Date:	February 20, 21, and 26, 2003

FIELD QC:

Trip Blanks (TB):	Y0TQ0, Y0TS7 and Y0TS9
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0TT0
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKZT:	Y0TQ2
VBLKAL:	T0TQ0 and Y0TQ2DL
VBLKBS:	Y0TS3, Y0TS7, Y0TS8, Y0TS9, Y0TT0, Y0TS3DL, Y0TS8DL and storage blank VHBLKBU

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for several analytes are qualified as nondetected and estimated (U,J) due to method blank and trip blank contaminations.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

3) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) problems.

SAMPLING ISSUES:

1) Detected result for chloroform in sample Y0TQ2 is qualified as nondetected and estimated (U,J) due to a trip blank contamination.

2) Airbills between organics and inorganics shipments were switched. FedEx account number was provided to the laboratories to forward the coolers to the proper laboratories.

3) Sample Y0TS3 was designated for "laboratory QC" on the Traffic Report & Chain of Custody Record (TR/COC). Per previous instruction from Region 9, laboratory quality control is not needed for the VOA fraction. The matrix spike/matrix spike duplicate analysis were not performed.

ADDITIONAL COMMENTS:

Other than laboratory artifacts/contaminants (retention times = 3.84-3.85, 6.03, 7.09-7.10, 9.25-9.26, 11.13, 12.08-12.09, 12.24-12.25, and 13.55 minutes), tentatively identified compounds (TICs) were found in samples Y0TS3 and Y0TS8 (see attached Form 1LCFs).

Manual integrations were performed on several analytes in the initial and continuing calibrations because the analyte was either not found or was incorrectly integrated by the automatic integration routine. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Low Concentration Organics Analysis,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	NO	D
CONTINUING CALIBRATIONS	NO	C, E
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
DEUTERATED MONITORING COMPOUNDS	NO	F
MATRIX SPIKE/DUPLICATES	N/A	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, G
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank and trip blank contaminations, and are flagged "U,J" in Table 1A.

- Acetone in samples Y0TQ0, Y0TQ2, Y0TS7, Y0TS8, Y0TS9, Y0TT0 and storage blank VHBLKBU
- cis-1,3-Dichloropropene in all samples and storage blank VHBLKBU
- Bromoform in samples Y0TQ0, Y0TS9, Y0TT0, and storage blank VHBLKBU
- Tetrachloroethene in sample Y0TS9, Y0TT0, and storage blank VHBLKBU
- Chloroform in sample Y0TQ2

Acetone was found in method blanks VBLKZT, VBLKAL and VBLKBS at concentrations of 3 μg/L, 2 μg/L and 2 μg/L, respectively. cis-1,3-Dichloropropene was found in method blanks VBLKZT, VBLKAL and VBLKBS at concentrations of 0.2 μg/L, 0.1 μg/L and 0.2 μg/L, respectively. Bromoform was found in method blanks VBLKAL and VBLKBS at concentrations of 0.4 μg/L and 0.2 μg/L, respectively. Tetrachloroethene was found in method blank VBLKBS and trip blank Y0TS7 at concentrations of 0.2 μg/L and 2 μg/L, respectively. Chloroform was found in trip blanks Y0TQ0, Y0TS9, and Y0TS7 at concentrations of 0.6 μg/L, 0.4 μg/L, and 0.5 μg/L, respectively. Results for the samples

listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Acetone detected in sample Y0TS3 (270 μg/L) and tetrachloroethene detected in samples Y0TQ2 (19 μg/L), Y0TS3 (35 μg/L), and Y0TS8 (14 μg/L) are not qualified as nondetected and estimated since their concentrations exceed 10 times the amount in the associated method blank for acetone or 5 times the amount in the associated trip blank for tetrachloroethene.

Although trichloroethene was found in method blank VBLKAL, 4-methyl-2-pentanone was found in method blank VBLKAL, 1,2-dichlorobenzene was found in method blank VBLKZT, 1,2,4-trichlorobenzene and 1,2,3-Trichlorobenzene were found in method blanks VBLKZT and VBLKAL, and methylene chloride was found in trip blanks Y0TQ0, Y0TS9, Y0TS7, and equipment blank Y0TT0, no data were qualified because these analytes were not detected in the associated samples.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

*An equipment blank is clean water that has been collected as a sample using decontaminated sampling equipment. The intent of an equipment blank is to monitor for contamination introduced by the sampling activity, although any laboratory introduced contamination will also be present.*i

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analyte are qualified as estimated due to low relative response factors (RRFs) in the continuing calibration, and are flagged "J" in Table 1A.

- Acetone in sample Y0TQ2 and method blank VBLKZT

An RRF of 0.046 was observed for acetone in the continuing calibration performed on February 20, 2003. This value is below the 0.05 validation criterion. Detected results for the analyte listed above should be considered as the minimum concentrations at which this analyte is present in the samples. Where the results for this analyte are nondetected, false negatives may exist.

DMC 2-hexanone-d5 also had a low RRF (0.039) in the initial calibration performed on February 25, 2003 and a low RRF (0.034) in the continuing calibration performed on

February 20, 2003. Quantitation of the analytes associated with this DMC may have been affected by the low RRFs. See attached Table 9.

The RRF evaluates instrument sensitivity and is used in the quantitation of target analytes.

D. Detected results and quantitation limits for the following analyte are qualified as estimated due to a large percent relative standard deviation (%RSD) in the initial calibration, and are flagged "J" in Table 1A.

- Tetrachloroethene in samples Y0TS3, Y0TS7, Y0TS8, Y0TS9, Y0TT0, method blank VBLKBS, and storage blank VHBLKBU

A %RSD of 33.4% was observed for tetrachloroethene in the initial calibration performed on February 25, 2003. This value exceeds the ≤30.0% validation criterion.

The DMC 2-hexanone-d5 also had a %RSD (42.8%) that exceeded the ≤30.0% validation criteria in the initial calibration performed on February 25, 2003. Quantitation of the analytes associated with this DMC may have been affected by the high %RSD. See attached Table 9.

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

E. Detected results and quantitation limits for the following analyte are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Chloromethane and methylcyclohexane in sample Y0TQ2 and method blank VBLKZT

- 4-Methyl-2-pentanone and 2-hexanone in sample Y0TQ0 and method blank VBLKAL

Percent differences exceeding the ±30.0% validation criterion were observed for the analytes listed above in the continuing calibrations performed on February 20 and 21, 2003 (see Table 2).

DMCs vinyl chloride-d3, chloroethane-d5, 1,1-dichloroethene-d2, 2-butanone-d5, benzene-d6, 1,2-dichloropropane-d6, toluene-d8, and 2-hexanone-d5 also had %Ds that exceeded the ≤30.0% validation criteria in the continuing calibration performed on February 20, 2003 (see Table 2). DMCs benzene-d6, 1,2-dichloropropane-d6, toluene-d8, trans-1,3-dichloropropene-d4, and 1,1,2,2-tetrachloroethane-d2 also had %Ds that exceeded the ≤30.0% validation criteria in the continuing calibration performed on February 21, 2003 (see Table 2). In addition, DMC 2-hexanone-d5 had a %D that exceeded the ≤30.0% validation criteria in the continuing calibration performed on February 26, 2003 (see Table 2). Quantitation of the analytes associated with these DMCs may have been affected by the high %Ds. See attached table 9.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

F. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{1,1-Dichloroethene-d_2}
- *cis*-1,2-dichloroethene in sample Y0TS3

{trans-1,3-Dichloropropene-d_4}
- *cis*-1,3-dichloropropene, *trans*-1,3-dichloropropene, and 1,1,2-trichloroethane in sample Y0TS3

DMC recoveries outside QC limits are shown below.

Sample	DMC	% Recovery	QC Limits
Y0TS3	1,1-Dichloroethene-d2	136	65-130
Y0TS8DL	1,1-Dichloroethene-d2	61	65-130
Y0TS9	1,2-Dichloropropane-d6	138	84-123
Y0TQ2DL	trans-1,3-Dichloropropene-d4	75	80-128
Y0TS3	trans-1,3-Dichloropropene-d4	78	80-128
Y0TS3DL	trans-1,3-Dichloropropene-d4	68	80-128
Y0TS8DL	trans-1,3-Dichloropropene-d4	72	80-128
Y0TS3DL	2-Hexanone-d5	33	37-169
Y0TS8DL	2-Hexanone-d5	33	37-169
Y0TQ2	1,1,2,2-Tetrachloroethane-d2	150	75-131

Detected results for affected analytes where DMC recoveries exceeded QC limits may be biased high. Detected results for affected analytes where DMC recoveries fell below QC limits may be biased low, and where the results are nondetected, false negatives may exist. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are qualified. The samples were not reanalyzed.

Deuterated monitoring compounds (DMCs) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

G. Sample Y0TQ2 was analyzed at 12.5-fold dilution due to the high level of trichloroethene that exceeded the calibration range. The result for trichloroethene is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

SampleY0TS3 was analyzed at a 3.9-fold dilution due to high levels of acetone and tetrachloroethene that exceeded the calibration range. Results for acetone and tetrachloroethene are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

SampleY0TS8 was analyzed at a 3.6-fold dilution due to the high levels of 1,1,2-trichloro-1,2,2-trifluoroethane and trichlorofluoromethane that exceeded the calibration range. Result for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

SFUND RECORDS CTR
149114

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Diane Strassmeier, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105178 Amendment 2

DATE: April 24, 2003

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	31445
SDG NO.:	Y0TQ5
LABORATORY:	Liberty Analytical (LIBRTY)
ANALYSIS:	Volatiles
SAMPLES:	10 Water Samples
COLLECTION DATE:	February 24 through 26 and March 3, 2003
REVIEWER:	Nanny Estrada, ESAT/Laboratory Data Consultants (LDC)

The comments and qualifications presented in this report have been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Edward Messer, CLP PO USEPA Region 4
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

B0105178-2710/31445/Y0TQ5V.wpd

Data Validation Report

Case No.:	31445	SDG No.:	Y0TQ5
Site:	Omega Chem OU-2		
Laboratory:	Liberty Analytical		
Reviewer:	Nanny Estrada, ESAT/LDC		
Date:	April 24, 2003		

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0TP0, Y0TP2, Y0TP3, Y0TP4, Y0TQ3, Y0TQ4, Y0TQ5, Y0TQ6, T0TQ7 and Y0TR0
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLM04.2
Collection Date:	February 24 through 26 and March 3, 2003
Sample Receipt Date:	February 26 and 27 and March 4, 2003
Extraction Date:	Not Applicable
Analysis Date:	February 27 through March 1, 3, 7, 10 and 11, 2003

FIELD QC:

Trip Blanks (TB):	Y0TP1, Y0TP5, Y0TP7, and Y0TQ8 (see Additional Comments)
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0TP2 and Y0TP3
Field Duplicates (D2):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKCK:	Y0TQ5
VBLKDD:	Y0TP0, Y0TP2, Y0TP3, Y0TQ6, Y0TR0, Y0TP2DL, Y0TP3DL, Y0TQ6DL and Y0TQ7
VBLKDC:	Y0TP0DL
VBLKGK:	Y0TQ3 and Y0TQ4
VBLKGI:	Y0TP4, Y0TQ3DL, Y0TQ4DL, Y0TQ4DLMS and Y0TQ4DLMSD
VBLKGH:	VHBLKDB

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results for methylene chloride in samples Y0TP4 and Y0TQ5 are qualified as nondetected and estimated (U,J) due to method blank and storage blank contamination.

2) Detected results and quantitation limits for several analytes are qualified as estimated (J) due to calibration problems.

SAMPLING ISSUES:

Detected result for chloroform in some samples are qualified as nondetected and estimated (U,J) due to trip blank contamination.

ADDITIONAL COMMENTS:

Results for trip blanks Y0TP7, Y0TQ8, Y0TP1, and Y0TP5 (collected on February 24, 25 and 26, 2003 and March 3, 2003, respectively) are located in Case 31445, Sample Delivery Group (SDG) Y0TP6 (see Comment B for qualifications).

Other than laboratory artifacts (retention times = 7.6, 9.2, 14.6 and 16.2 minutes), a tentatively identified compound (TIC) was found in the sample Y0TQ3 (see attached Form 1F).

Manual integrations were performed on some of the process files in the initial and continuing calibrations because the analyte was either not found or was incorrectly integrated by the automatic integration routine. The manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- USEPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organics Analysis, OLM04.2, May 1999; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	NO	B
FIELD BLANKS	NO	B
SYSTEM MONITORING COMPOUNDS	NO	G
MATRIX SPIKE/DUPLICATES	NO	D
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, E, F
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	YES	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank, storage blank and trip blank contamination, and are flagged "U,J" in Table 1A.

- Methylene chloride in samples Y0TP4 and Y0TQ5
- Chloroform in samples Y0TP0, Y0TP2, Y0TP3, Y0TQ4, Y0TQ6 and Y0TR0

Methylene chloride was found in method blank VBLKDC and storage blank VHBLKDB at concentrations of 0.7 μg/L and 0.4 μg/L, respectively. Chloroform was found in trip blanks Y0TP1, Y0TP5, Y0TP7 and Y0TQ8 at concentrations of 0.5 μg/L (see SDG Y0TP6). Results for the samples listed above are considered nondetected and estimated (U,J) and the quantitation limits have been increased according to the blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for the common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

Tetrachloroethene detected in all samples except Y0TR0 and chloroform detected in samples Y0TP4 and Y0TQ3 are not qualified as nondetected and estimated since their concentrations exceed 5 times the amount in the associated method blanks and trip blanks.

Tetrachloroethene detected in sample Y0TR0 is not qualified as nondetected and estimated because tetrachloroethene was not found in the associated method blank and trip blank.

Although 1,4-dichlorobenzene was found in method blank VBLKGK and 1,2,4-trichlorobenzene was found in method blanks VBLKCK, VBLKDC, VBLKDD and VBLKGK, no data are qualified because these analytes were not detected in the associated samples.

A laboratory method blank is laboratory reagent water analyzed with all reagents, DMCs, and internal standards and carried through the sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

A trip blank is laboratory reagent water which is shipped from the laboratory to the field with the empty sample containers and back to the laboratory with the filled sample containers. A trip blank is intended to detect contaminants introduced during the transport of the samples to the laboratory, although any laboratory introduced contamination will also be present. Contaminants that are found in the trip blank which are absent in the laboratory blank could be indicative of a problem in transportation, storage, the bottle preparation procedure, or other indeterminate error.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Acetone, 2-butanone, and 2-hexanone in sample Y0TQ5 and method blank VBLKCK
- Chloroethane in samples Y0TP0, Y0TP2, Y0TP3, Y0TQ6, Y0TQ7, Y0TR0, and method blank VBLKDD
- 1,1-Dichloroethene in samples Y0TQ3, Y0TQ4 and method blank VBLKGK
- Acetone and 1,1-dichloroethene in sample Y0TP4 and method blank VBLKGI

Percent differences exceeding the ±25.0% validation criterion were observed for the analytes listed above in the continuing calibrations performed on February 27 and 28, 2003 and March 7 and 10, 2003 (see Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

D. The matrix spike (MS) and matrix spike duplicate (MSD) recoveries for trichloroethene in QC samples Y0TQ4DLMS and Y0TQ4DLMSD did not meet the criteria for accuracy in the SOW. The percent recoveries are presented below.

Analyte	Y0TQ4DLMS % Recovery	Y0TQ4DLMSD % Recovery	QC Limits % Recovery
Trichloroethene	135	128	71-120

Results obtained may indicate poor laboratory technique or matrix effects which may interfere with accurate analysis. The effect on data quality is not known.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and analysis.

E. Sample Y0TP4 was analyzed at a 50-fold dilution due to high levels of target analytes. The CRQLs listed for this sample in Table 1A have been multiplied by the dilution factor.

F. Samples Y0TP0, Y0TP2 and Y0TP3 were reanalyzed at 8.3-fold, 3.3-fold and 3.9-fold dilutions, respectively, due to the high levels of trichloroethene that exceeded the calibration range. Results for this analyte are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Samples Y0TQ4 and Y0TQ6 were reanalyzed at 2.9-fold and 7.1-fold dilutions, respectively, due to the high levels of tetrachloroethene that exceeded the calibration range. Results for this analyte are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0TQ3 was reanalyzed at a 12.5-fold dilution due to the high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

G. Recoveries for the surrogate toluene-d8 in samples T0TQ4DL (87%) and Y0TQ4DLMSD (87%) were below the QC limit of 88-110%. Since these recoveries are only slightly below the QC limit, no adverse effect on data quality is ecpected.

Surrogates are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

SFUND RECORDS CTR
149117

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Diane Strassmeier, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer, RF
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: B01
Technical Direction No.: B0105178 Amendment 2

DATE: April 30, 2003

SUBJECT: Data Evaluation Tier 1A Cover Memo for the Omega Chemical OU-2 site, Case 11-BCCO-51.0, SDG Nos.: 03B140, 03B155, 03B162, 03B166, 03B177, 03B188, and 03C008

SUMMARY: A total of 38 water samples received by EMAX Laboratories, Inc. were analyzed for dissolved gases by EMAX standard operating procedure (SOP) EMAX-RSK175 under the Regional Environmental Analytical Procurement (REAP) Statement of Work (SOW).

A forms-only evaluation of the data package was performed to identify any key analytical issues/deficiencies affecting data quality. This evaluation approach is employed when in-depth data review is not required as indicated by the data user. During this limited evaluation, areas of concern were noted (see Lettered and Additional Comments).

The evaluation included: a review of the data package for completeness, review of the chain of custody forms (against laboratory reported information, for signatures, for sample condition upon receipt by the laboratory and for sample preservation), review of holding times, review of QC summaries, review of blanks for contamination, random check of reported results against raw data, random check of raw data for interference problems or system control problems.

SDG No.: 03B140

The following data quality issues should be noted:

A. The methane result for sample GW103-MW04B-0075 is qualified as nondetected and estimated because of travel blank contamination. Sample results greater than the method detection limit (MDL) are qualified as nondetected unless the concentration of the analyte in the sample exceeds 10 times the amount in any associated blank. The reported result of 2.6 µg/L for methane in travel blank sample GW103-MW04A-2001 exceeds the contract required quantitation limit (CRQL) of 1.0 µg/L.

Additional Comments:

1. A laboratory quality control (QC) sample was not specified on the chain of custody (CoC) form.

2. A matrix spike analysis was not performed for this SDG and could not be evaluated.

SDG No.: 03B155

The following data quality issues should be noted:

A. The methane results for samples GW103-OW1A-0080 and GW103-OW8-0075 are qualified as nondetected and estimated because of travel blank contamination. Sample results greater than the MDL are qualified as nondetected unless the concentration of the analyte in the sample exceeds 10 times the amount in any associated blank. The reported result of 2.2 µg/L for methane in travel blank sample GW103-OW2-2002 exceeds the CRQL of 1.0 µg/L.

Additional Comments:

1. Field QC sample travel blank GW103-OW2-2002 was not sent blind to the laboratory. The effect on data quality is not known.

2. The laboratory noted that the collection time on the sample label of GW103-OW2-0078 did not match the collection time on the CoC form. The effect on data quality is not known.

3. Note that samples GW103-OW1B-0116 and GW103-OW4B-0125 were diluted 50 and 250 times, respectively, and reanalyzed to provide results within the established calibration curve.

SDG No.: 03B162

The following data quality issues should be noted:

A. The methane result for sample GW103-OW6-0048 was qualified as nondetected and estimated because of travel blank contamination. Sample results greater than the MDL are qualified as nondetected unless the concentration of the analyte in the sample exceeds 10 times the amount in any associated blank. The reported result of 2.5 µg/L for methane in travel blank sample GW103-OW6-2003 exceeds the CRQL of 1.0 µg/L.

Additional Comments:

1. A laboratory QC sample was not specified on the CoC form.

2. A matrix spike analysis was not performed for this SDG and could not be evaluated.

3. The laboratory noted that sample QW103-OW6-2003 was listed incorrectly on the CoC form. The laboratory contacted the Region for the correct sample identification.

SDG No.: 03B166

The following data quality issues should be noted:

Additional Comments:

1. The reported result of 2.4 µg/L for methane in travel blank sample GW103-MW03A-2004 exceeds the CRQL of 1.0 µg/L. The no qualification of sample data due to travel blank contamination is warranted.

2. The laboratory noted that sample GW103-MW03A-2004 was listed incorrectly on the CoC form. The laboratory contacted the Region for the correct sample identification.

3. Note that sample GW103-MW03A-0042 was diluted 10 times and reanalyzed to provide a result within the established calibration curve.

SDG No.: 03B177

The following data quality issues should be noted:

A. The methane result for sample GW103-MW08D-0116 was qualified as nondetected and estimated because of travel blank contamination. Sample results greater than the MDL are qualified as nondetected unless the concentration of the analyte in the sample exceeds 10 times the amount in any associated blank. The reported result of 2.3 µg/L for methane in travel blank sample GW103-MW08B-2005 exceeds the CRQL of 1.0 µg/L.

Additional Comments:

1. A laboratory QC sample was not specified on the CoC form.

2. A matrix spike analysis was not performed for this SDG and could not be evaluated.

3. The laboratory noted that sample GW103-MW08B-2005 was listed incorrectly on the CoC form. The laboratory contacted the Region for the correct sample identification.

4. Note that sample GW103-MW08C-0087 was diluted 10 times and reanalyzed to provide a result within the established calibration curve.

SDG No.: 03B188

The following data quality issues should be noted:

A. The methane results for samples GW103-MW01B-0080, GW103-MW01B-1080, and GW103-MW09B-0054 are qualified as nondetected and estimated because of travel blank contamination. Sample results greater than the MDL are qualified as nondetected unless the concentration of the analyte in the sample exceeds 10 times the amount in any associated blank. The reported result of 2.4 µg/L for methane in travel blank sample GW103-MW01A-2006 exceeds the CRQL of 1.0 µg/L.

Additional Comments:

1. A laboratory QC sample was not specified on the CoC form.

2. A matrix spike analysis was not performed for this SDG and could not be evaluated.

3. Note that sample GW103-MW09A-0032 was diluted 100 times and reanalyzed to provide a result within the established calibration curve.

SDG No.: 03C008

The following data quality issue should be noted:

A. The methane results for samplesGW103-MW02A-0055 and GW103-MW05A-0049 are qualified as nondetected and estimated because of travel blank contamination. Sample results greater than the MDL are qualified as nondetected unless the concentration of the analyte in the sample exceeds 10 times the amount in any associated blank. The reported result of 2.1 µg/L for methane in travel blank sample GW103-MW02A-2007 exceeds the CRQL of 1.0 µg/L.

Tier 1A Table 1As were not requested.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

B0101190

Author: Richard Bauer/R9/USEPA/US **Date:** 05/06/2003 01:48 PM

TECHNICAL DIRECTION FORM # B0101190

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 5/06/03

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate, 1,4-dioxane
R03S54	water	up to 40

Instructions: Analyze up to 40 water samples for perchlorate and for 1,4-dioxane following R9 Lab SOPs for method 314.0 and 3520/8270C.

Deliverables	**Due Dates**
[x] Complete Data Package	**20** days from receipt of last sample in each SDG
[x] Analytical Report each SDG	**20** days from receipt of last sample in

Site Location:	Whittier, CA	EPA Program:	Superfund
Site Phase:	RI/FS	Operable Unit #:	00
CERCLIS #:	CAD042245001		
SSID #:	BC		
EPA RPM:	Diane Strassmaier	SFD-7-4:	2-3247

Sampling Dates: 05/12 - 05/23/03

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	Lab Assignment Number	Case
21	Water	CLPAS VOCs	CLP OLC03.2	CLP	
21	Water	CLPAS VOCs	CLP OLM04.2	CLP	
31	Water	Total CLPAS Metals	CLP ILM04.1	CLP	
31	Water	Dissolved CLPAS Metals	CLP ILM04.1	CLP	
31	Water	Total Cyanide	CLP ILM04.1	CLP	
15	Water	1,4-Dioxane	SW846 8270C with SIM or Isotopic Dilution	CLP	
31	Water	Perchlorate	EPA 314.0	EPA R9 Lab	R03S54
				EPA R9 Lab	R03S54

Turn Around Times:
EDD/Faxed HCDD 21 days.

Data Distribution:

Lab Assignments Forwarded
EPA R9 Lab emailed to Bill Clarke on 05/06/03.

RFA - Supplemental Information:
1. VOCs DLs at 1 ug/L where possible.
2. For VOCs anticipate dilutions for approximately 3 samples with individual analytes > 10,000 ug/L, approximately 6 samples with individual analytes > 1,000 ug/L, and approximately 7 samples with individual analytes > 200 ug/L.
3. 1,4-Dioxane DL at 2 ug/L.
4. For 1,4-Dioxane anticipate dilutions for 1 sample with concentrations > 10,000 ug/L, and 1 sample with concentrations > 250 ug/L.
5. Perchlorate DL at 2 ug/L.
6. Samples requiring dilutions will be noted on Chains-Of-Custody and Traffic Reports.
7. As per RSCC Form "Please provide inorganic CLP IDs beginning with the same "numbering" sequence as the organic CLP numbers."

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
VOCs	2	100%
1,4-Dioxane	1A	100%
Metals (Total and Dissolved)	1A	100%
Cyanide	1A	100%
Perchlorate	1A	100%

Turn Around Times:

Supplemental Data Validation Information :

1. VOCs are primary COCs, particularly PCE and its degradation products, Freons, and to a lesser extent, aromatic compounds (BTEX).
2. 1,4-Dioxane is a COC for potential treatment ramifications. Please anticipate dilutions for 1 sample with concentrations > 10,000 ug/L, and 1 sample with concentrations > 250 ug/L.
3. For VOCs anticipate dilutions for approximately 3 samples with individual analytes > 10,000 ug/L, approximately 6 samples with individual analytes > 1,000 ug/L and approximately 7 samples with individual analytes > 200 ug/L.
4. Samples requiring dilutions will be noted on Chains-Of-Custody and Traffic Reports.
5. Perchlorate DL 2 ug/L.

Company	Due Date
Validation Received	
Validation Forwarded	

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Bill Clarke
Company: Weston Solutions, Inc.
Office Phone Number: 818 382-1806
Mobile Phone Number: 818 599-6468
Email: bill.clarke@westonsolutions.com
Office Address: Weston Solutions, Inc.
Suite 1000
14724 Ventura Blvd.
Sherman Oaks, CA 91403

EVENT NOTES

EVENT NOTES:

1. On 04/25/03 contacted by Bill Clarke. He inquired as to whether or not an RSCC Form had been received from the EPA RPM. He sent it to her early April. Replied that I had not seen it yet and asked him to email a copy to me by 04/28/03 and to cc EPA RPM. He said he would. As per Bill, sampling is set to begin 05/16/03. (CB)
2. Received RSCC Form from Bill Clarke 04/25/03 at 1532. The form indicates that sampling is estimated to begin 05/12/03. (CB)
3. On 05/01/03, attempted to look-up plan approval status. It appears as though this event is covered by an approved plan. (CB)
4. As per correspondence between Rich Frietas and Rich Bauer on 05/05/03, EPA R9 Lab will take 1,4-Dioxane and Perchlorate

samples. The other samples will go to CLP. (CB)

RSCC FORM

RSCC FORM:

Received from Bill Clarke 04/25/03 at 1532.

2Q03 Lab RequestR0.WPD

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REQUEST FOR LABORATORY SAMPLE ANALYSIS AND DATA EVALUATION

It is required that a completed request form be submitted to the QA Office with all project plans in order to expedite QA Office scheduling and ensure timeliness of analytical support and data evaluation services.

EPA Site Name: Omega Chemical Superfund Site		Site Location (City/State): Whittier, California
EPA Program: Superfund	Site Phase: RI/FS	
CERCLIS #: CAD042245001	GPRA #: 02D or 03E	SSID #: BC
EPA **RPM**/SAM/PO: Diane Strassmaier		Mail Code: SFD-7-4
RPM/SAM/PO Phone Number: (415) 972-3247	Fax Number: (415) 947-3528	**RPM**/SAM/PO Email: Strassmaier.Diane@epamail.epa.gov
Sampler Name: Donald W. "Bill" Clarke III		Company: Weston Solutions, Inc.
Sampler Office Phone Number: (818) 382-1806	Sampler Fax Number: (818) 382-1801	Sampler Mobile Phone Number: (818) 599-6468
Sampler Address: Weston Solutions, Inc. Suite 1000, 14724 Ventura Blvd. Sherman Oaks, CA 91403		Sampler Email: Bill.Clarke@westonsolutions.com
Proposed Sampling Dates: Quarterly Monitoring Well Sampling and Split Sampling — 5-12-03 to 5-23-03 (estimated)		

Signature and title of EPA Remedial Project Manager, Site Assessment Manager, Project Officer, or designee authorizing approval of this analytical support and data evaluation request:

INCLUDE AS PART OF THE SAMPLING AND ANALYSIS PLAN OR FAX TO REGIONAL SAMPLE CONTROL COORDINATOR (RSCC) AT (415) 947-3564. QUESTIONS CONTACT RSCC AT (415) 972-3814 OR REGION 9 QUALITY ASSURANCE MANAGER AT (415) 972-3798.

Signature and Title: _____, Remedial Project Manager Date:

Description of requested analytical services

Compounds/Analytes	Number of Samples	Matrix	Methods by Number	Type of Data Deliverable and Turn Around Time: 21 days	
				Preliminary Data*	Data Package
VOCs (CLPAS)	21	Water	OLC03.2/SW846 8260B	EDD or faxed HCDD	HCDD. EDD
VOCs (CLPAS)	21	Water	OLM04.2/SW846 8260B	"	"
Total TAL Metals (CLPAS)	31	Water	ILM04.1/SW846 6010B/7471	"	"
Dissolved TAL Metals (CLPAS)	31	Water	ILM04.1/SW846 6010B/7470	"	"
Total Cyanide	31	Water	ILM04.1/EPA 335.3	"	"
1,4-Dioxane	15	Water	SW846 8270C w/ SIM or isotopic dilution	"	"
Perchlorate	31	Water	EPA 314.0/EPA 300.0M	"	"

*** Note: EDD = Electronic Data Deliverable HCDD = Hard Copy Data Deliverable**

Unless otherwise specified, the QA Office will utilize the detection limits and quality control criteria listed in the requested method for scheduling and data evaluation purposes. If other detection limits or quality

control criteria are needed, please attach relevant Data Quality Indicator (DQI) tables providing project-specific criteria. In instances where this information is not included in the method and no project-specific DQI table is otherwise provided, the RSCC and data evaluators will default to relevant QA Office DQI tables.

Supplementary analytical request information

Include any discussion of expanded or reduced analyte lists, reporting units, modified reporting limits, specialized preparation or analytical procedures, specialized sampling devices (i.e., Encore), etc.

VOCs DLs 1 µg/L where possible. 1,4-Dioxane DL 2 ug/L.

For all other analyses, please see DQI Tables from QAPP, attached.

ORGANIC DATA EVALUATION REQUIREMENTS

Compound(s)	Tier	Completeness Percentage Level	Method(s) by Number	Notes	Data Reviewer
Volatiles	1A	10 20 25 50 100 Other:___	_____	_____	
	1B	10 20 25 50 100 Other:___	_____	_____	
	2	10 20 25 50 100 Other:100	SW846-8260B	_____	
	3	10 20 25 50 100 Other:___	_____	_____	
Semi-Volatiles	1A	10 20 25 50 100 Other:___	_____	_____	
	1B	10 20 25 50 100 Other:___	_____	_____	
	2	10 20 25 50 100 Other:___	_____	_____	
	3	10 20 25 50 100 Other:___	_____	_____	
Pesticides	1A	10 20 25 50 100 Other:___	_____	_____	
	1B	10 20 25 50 100 Other:___	_____	_____	
	2	10 20 25 50 100 Other:___	_____	_____	
	3	10 20 25 50 100 Other:___	_____	_____	
Herbicides N/A	1A	10 20 25 50 100 Other:___	_____	_____	
	1B	10 20 25 50 100 Other:___	_____	_____	
	2	10 20 25 50 100 Other:___	_____	_____	
	3	10 20 25 50 100 Other:___	_____	_____	
PCBs N/A	1A	10 20 25 50 100 Other:___	_____	_____	
	1B	10 20 25 50 100 Other:___	_____	_____	
	2	10 20 25 50 100 Other:___	_____	_____	
	3	10 20 25 50 100 Other:___	_____	_____	
Other:					
1,4-Dioxane	**1**	10 20 25 50 100 Other:100	SW846-8270Cw/SIM	_____	
_____	___	10 20 25 50 100 Other:___	_____	_____	
_____	___	10 20 25 50 100 Other:___	_____	_____	

Notes or Special Criteria (i.e., compounds and levels of concern, action levels, targeted samples, QC criteria changes, criteria for selection of focused review, etc.):

1. VOCs are the primary compounds of concern, particularly PCE and its degradation products, Freons, and to a lesser extent, aromatic compounds (BTEX).

2. 1,4-Dioxane is a compound of concern for potential treatment ramifications. Please anticipate dilutions for one sample with concentrations >10,000 ug/L, and one sample with concentrations >250 ug/L.

3. For VOCs, anticipate dilutions for approximately three samples with individual analytes >10,000 ug/L, approx-imately 6 samples with individual analytes >1,000 ug/L, and approximately 7 samples with individual analytes >200 ug/L. Will note samples requiring dilutions on Chains-of-custody/traffic reports.

4.

5.

6.

INORGANIC DATA EVALUATION REQUIREMENTS

Compound(s)	Tier	Completeness Percentage Level	Method(s) by Number	Notes	Data Reviewer
Metals	**1A**	10 20 25 50 100 Other:100	SW846-6010B/7000 Series	Dissolved and Total	
	1B	10 20 25 50 100 Other:___			
	2	10 20 25 50 100 Other:___			
	3	10 20 25 50 100 Other:___			
Cyanide	**1A**	10 20 25 50 100 Other:100	EPA 335.2	Total	
	1B	10 20 25 50 100 Other:___			
	2	10 20 25 50 100 Other:___			
	3	10 20 25 50 100 Other:___			
General Chemistry	1A	10 20 25 50 100 Other:___			
	1B	10 20 25 50 100 Other:___			
	2	10 20 25 50 100 Other:___			
	3	10 20 25 50 100 Other:___			
Anions	1A	10 20 25 50 100 Other:___			
	1B	10 20 25 50 100 Other:___			
	2	10 20 25 50 100 Other:___			
	3	10 20 25 50 100 Other:___			
Other: Perchlorate	**1A**	10 20 25 50 100 Other:___			
		10 20 25 50 100 Other:___			

Notes or Special Criteria (i.e., compounds and levels of concern, action levels, targeted samples, QC criteria changes, criteria for selection of focused review, etc.):

1. Perchlorate DL 2 ug/L

2. Please provide inorganic CLP IDs beginning with the same "numbering" sequence as the organic CLP numbers.

3.

SFUND RECORDS CTR
2070538

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

Date June 3, 2003

TO: Richard Bauer, Chemistry TOPO, EPA Region 9, Laboratory Section, PMD2

FROM: Ziyad Rajabi, Organic Group Leader

SUBJECT: Omega Chemical 1,4-Dioxane Analysis Results

As assigned under EPA Contract No. 68-W-01-028, TO # B01 and TDF B0101190, ESAT completed the analysis of 11 water samples, case R03S54, SDG 03135A (work orders 0305057, 0305064, 0305069 and 0305086), from the Omega Chemical project for 1,4-dioxane following USEPA Region 9 Laboratory SOP # 315 based on EPA method 8270. The draft analytical report and raw data package are attached.

Work is in progress on the remaining tasks assigned under this TDF. If you have any questions regarding this information please contact me at extension 2390.

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants

ESAT REGION 9 REVIEW FORM

TDF # B0101190 DOCUMENT CONTROL # 2838

ACTIVITY CODE 11 PRELIMINARY REVISED

EPA TOPO R. Bauer

WORK ORDERS 0305057, 0305064, 0305069 and 0305086

CASE # R03S54 SDG# 03135A

DUE DATE: 9-Jun-03 DATE SENT: 6/6/3

ANALYSIS/DESCRIPTION Omega Chemical 1,4-Dioxane 11 water

COMPUTER FILE NAME G:\USER\ESAT\#LAB DATA Deliverables\R03S54\03135A-2838

ANALYZED/PREPARED BY:

Print name	Signature	Date
Ron Buxton	RW Buxton	6/3/03

TECHNICAL / PEER REVIEW BY:

Print name	Approved	Date
Ziyad Rojabi	Ziyad Rojabi	6/5/3

FINAL REVIEW BY:

Print name	Approved	Date
SURENDER M. KAUSHIK	S. M. Kaushik	6-6-03

SFUND RECORDS CTR
2070537

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

Date June 9, 2003

TO: Richard Bauer, Chemistry TOPO, EPA Region 9, Laboratory Section, PMD2

FROM: Osell Salvador, Inorganic Group Leader

SUBJECT: Omega Chemical Perchlorate Analysis Results

As assigned under EPA Contract No. 68-W-01-028, TO # B01 and TDF B0101190, ESAT completed the analysis of 19 water samples, Case R03S54, SDG 03135A (work orders 0305057, 0305064, 0305069, 0305075, and 0305086), from the Omega Chemical project for perchlorate following USEPA Region 9 Laboratory SOP # 531 based on EPA Method 314. The draft analytical report and raw data package are attached.

Work is in progress on the remaining tasks assigned under this TDF. If you have any questions regarding this information please contact me at extension 2358.

Appendix A

EPA Region 9 Laboratory Data Package Review Form

Case Number R03554 **SDG Number** 03135A

Analysis perchlorate **SOP Number (s)** 531

Final Review of ESAT Data

Performed By: Barbara Bates **Start Date:** 06/12/03

Minimum Requirements:

- ☑ Read the ~~report narrative~~ and review the results spreadsheet.
- ☑ Review the TDF requirements and verify that the correct analytical procedure(s) were followed.
- ☑ Verify that header information (case number, SDG number, site name, matrix type, etc.) is consistent and correct.
- ☑ Verify that corrective actions for QC outliers or analytical difficulties described in the report narrative are appropriate.
- ☑ Review the results spreadsheet for proper flags and unusual or inconsistent results that may be of special interest (if known) to project management.

Comments: WO 0305057 Added For Batch B305138 MS1 & MS2 & MSD1 & MSD2 to final report.
5064
5069
5075
5086

NONE

Reviewer Signature Barbara Bates **Completion Date:** 06/12/03

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants

ESAT REGION 9 REVIEW FORM

TDF(S) # B0101190 DOCUMENT CONTROL # 3879

ACTIVITY CODE(S) 28 ☐ PRELIMINARY ☐ REVISED

EPA TOPO(S) R. Bauer

WORKORDER(S) 0305057, 0305064, 0305069, 0305075, 0305086

CASE# R03554 SDG(S)# 03135A

DUE DATE: Oct / 09 / 03 DATE SENT: Oct / 09 / 03

ANALYSIS/DESCRIPTION perchlorate, in water - Omega chemical

COMPUTER FILE NAME G:\USER\ESAT\ low deliverable \ R03554

ANALYZED/PREPARED BY:

Print name	Signature	Date
Christina Navarro-Dizon	C. Navarro Dizon	6/5/03

TECHNICAL / PEER REVIEW BY:

Print name	Approved	Date
O. Salvadal	[illegible]	Oct. 09-03

FINAL REVIEW BY:

Print name	Approved	Date
SURENDER M. KAUSHIK	S. M. Kaushik	6-9-03

SFUND RECORDS CTR
2070536

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

Date June 12, 2003

TO: Richard Bauer, Chemistry TOPO, EPA Region 9, Laboratory Section, PMD2

FROM: Ziyad Rajabi, Organic Group Leader

SUBJECT: Omega Chemical 1,4-Dioxane Analysis Results

As assigned under EPA Contract No. 68-W-01-028, TO # B01 and TDF B0101190, ESAT completed the analysis of 4 water samples, case R03S54, SDG 03142A (work orders 0305087 and 0305095), from the Omega Chemical project for 1,4-dioxane following USEPA Region 9 Laboratory SOP # 315 based on EPA method 8270. The draft analytical report and raw data package are attached.

Work is in progress on the remaining tasks assigned under this TDF. If you have any questions regarding this information please contact me at extension 2390.

Appendix A

EPA Region 9 Laboratory Data Package Review Form

Case Number R03554 **SDG Number** 03142A

Analysis 14 Dioxane **SOP Number (s)** 315

Final Review of ESAT Data

Performed By: Barbara Bates **Start Date:** 06/23/03

Minimum Requirements:

- [x] Read the ~~report narrative and~~ review the results spreadsheet.
- [x] Review the TDF requirements and verify that the correct analytical procedure(s) were followed.
- [x] Verify that header information (case number, SDG number, site name, matrix type, etc.) is consistent and correct.
- [x] Verify that corrective actions for QC outliers or analytical difficulties described in the report narrative are appropriate.
- [x] Review the results spreadsheet for proper flags and unusual or inconsistent results that may be of special interest (if known) to project management.

Comments:

NCAC

Reviewer Signature Barbara Bates **Completion Date:** 06-23-03

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants

ESAT REGION 9 REVIEW FORM

TDF # B0101190 DOCUMENT CONTROL # 2848

ACTIVITY CODE 11 PRELIMINARY REVISED

EPA TOPO R. Bauer

WORK ORDERS 0305087 and 0305095

CASE # R03S54 SDG# 03142A

DUE DATE: 12-Jun-03 DATE SENT: 06 / 12 / 03

ANALYSIS/DESCRIPTION Omega Chemical 1,4-Dioxane 4 water

COMPUTER FILE NAME G:\USER\ESAT\#LAB DATA Deliverables\R03S54\03142A-2848

ANALYZED/PREPARED BY:

Print name	Signature	Date
Ron Buxton	RW Buxton	6/12/03

TECHNICAL / PEER REVIEW BY:

Print name	Approved	Date
Li-Pin Lee	LP	6-12-03

FINAL REVIEW BY:

Print name	Approved	Date
Ziyad Rajabi	Ziyad Rajabi	06/12/03

TECHNICAL DIRECTION NO. B0105204

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp

TO NUMBER: B01 68-W-01-028 ICF Consulting **DATE:** 6-27-03

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package Information **Project Information:**

Case# 31721 Data type VO EPA Site Manager Loren Henning SDG# Y0XG8, G9, J0 & J1 Mail Code SFD-7-4 Laboratory CLAYT, MITK

[ ] EPA-Lead Non-CLP [ ] REAP EMAX

Y0XG8.WK4 Y0XG9.WK4 Y0XJ0.WK4 Y0XJ1.WK4

Level of Review:

Tier 2 (Tier 3-level review of PCE and its degradation products, freons, and BTEX.)

Deliverable	**Due date**
[X] Validation Reports	7-30-03

Pkgs to ESAT: 6-30
Y0XG8: 9W; G9: 2W; J0: 20W; J1:9W

B0101212

Author: Richard Bauer/R9/USEPA/US **Date:** 08/05/2003 10:41 AM

TECHNICAL DIRECTION FORM # B0101212

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 8/05/03

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate	1,4-dioxane
R03S75	water	up to 40	up to 20

Instructions: Analyze up to 40 water samples for perchlorate and up to 20 water samples for 1,4-dioxane following R9 Lab SOPs for method 314.0 and 3520/8270C.

Deliverables	**Due Dates**
[x] Complete Data Package	**20** days from receipt of last sample in each SDG
[x] Analytical Report each SDG	**20** days from receipt of last sample in

Site Location:	Whittier, CA	EPA Program:	Superfund
Site Phase:	RI	Operable Unit #:	02
CERCLIS #:	CAD042245001	SSID #:	BC
Site Notes:		Diane Strassmaier is no longer the RPM. All data should be sent to Loren Henning until her position is back-filled.	
EPA RPM:	Loren Henning	SFD-7-4	2-3164

Sampling Dates: 08/18 - 08/29/03

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	Lab Assignment Number	Case
21	Water	CLPAS VOCs	CLP OLC03.2/SW846 8260B	CLP	
21	Water	CLPAS VOCs	CLP OLM04.2/SW846 8260B	CLP	
31	Water	Total CLPAS Metals	CLP ILM04.1/SW846 6010B & 7471	CLP	
31	Water	Dissolved CLPAS Metals	CLP ILM04.1/SW846 6010B & 7471	CLP	
31	Water	Total Cyanide	CLP ILM04.1/EPA 335.3	CLP	
15	Water	1,4-Dioxane	SW846 8270C with SIM or Isotopic Dilution	CLP	
31	Water	Perchlorate	EPA 314.0	EPA R9 Lab	R03S75
				EPA R9 Lab	R03S75

Turn Around Times:
EDD/Faxed HCDD 21 days.

Data Distribution:
EDDs to Bill Clarke --> bill.clarke@westonsolutions.com

RFA - Supplemental Information:
1. "VOCs QLs as per OLC03.2/OLM04.2 OK"
2. 1,4-Dioxane QL at 2 ug/L.
3. Estimate 3 VOC samples with individual analytes > 10,000 ug/L.
4. Estimate 6 VOC samples with individual analytes > 1,000 ug/L, < 10,000 ug/L.
5. Estimate 7 VOC samples with individual analytes > 200 ug/L, < 1,000 ug/L.
6. Estimate one 1,4-dioxane sample > 10,000 ug/L.
7. Estimate one 1,4-dioxane sample > 250 ug/L, < 10,000 ug/L.

Lab Assignments Forwarded
EPA R9 Lab emailed 08/01/03 1310.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level	Company	Due Date
VOCs	2	100%		

1,4-Dioxane	1A/1B	100%	
Metals (Total and Dissolved)	1A/1B	100%	
Cyanide	1A/1B	100%	
Perchlorate	1A/1B	100%	

Turn Around Times:
60 days for VOCs.
35 days for all others.

Supplemental Data Validation Information :
1.

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name:	Bill Clarke
Company:	Weston Solutions, Inc.
Office Phone Number:	818 482-1806
Mobile Phone Number:	818 599-6468
Email:	bill.clarke@westonsolutions.com
Office Address:	Weston Solutions, Inc. Suite 1000 14724 Ventura Blvd. Sherman Oaks, CA 91403

EVENT NOTES

EVENT NOTES:
1. RSCC Form received from Bill Clarke on 07/18/03 at 1612. (CB)
2. As per Upcoming Lab Work - R9 Lab spreadsheet received from Rich Bauer on 07/31/03 at 1155, it looks like they will be able to take Perchlorate and 1,4-Dioxane. (CB)
3. Checked plan approval status in Document Review Database. The plan appears to be approved in 2001. (CB)
4. On 08/01/03 at 1314 CLP portion of the RFA forwarded to Freitas for CLP scheduling and coordination. (CB)

RSCC FORM

RSCC FORM:
RSCC Form received from Bill Clarke on 07/18/03 at 1612. (CB)

3Q03RSCCrequest.wpc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGIONAL SAMPLE CONTROL AND COORDINATION (RSCC) FORM

For more information or questions on available services refer to the attached PMD Points of Contact for Plan Review, Scheduling of Analytical Services, and Data Review list.

EPA Site Name: Omega Chemical Superfund Site	
Site Location (City/State): Whittier and Santa Fe Springs, California	
EPA Program: Superfund	
Site Phase: RI	**Operable Unit Number:** 02
CERCLIS Number: CAD042245001	**SSID Number:**

Accounting Information			
FY:	**Appr:**	**Program Results Code:**	
Object Class:	**Site Project:**	**Cost Org:**	

Sampling Dates: August 18, 2003 through August 29, 2003

EPA RPM/SAM/PM: Loren Henning, Acting RPM	
Phone Number: 415-947-3528	**Mail Code:** SFD-7-4

Sampler Name: Bill Clarke

Company: Weston Solutions, Inc.	**Email:** Bill.Clarke@westonsolutions.com
Office Phone Number: 818-482-1806	**Mobile Phone Number:** 818-599-6468
Mailing Address:	

Title of plan or addendum to existing plan under which this sampling event will occur: Omega Chemical Superfund Site Field Sampling Plan and Quality Assurance Project Plan
Plan Preparation Date: July 2001

Quality Assurance Office Use Only	
Plan Reviewer:	Plan DCN:
Plan Approval Status:	Plan Approval Date:

Request For Analysis (RFA)

In order to expedite preparation of the RSCC Form insert copy of Table 5 Request for Analytical Services from the Sampling and Analysis Plan (SAP) or plan addendum, if electronically available. Table 5 is a required part of all SAPs. For additional information on Table 5 see Sampling and Analysis Plan (SAP) Guidance and Template, Version 1 EPA Analytical Services Used, R9QA/001.1, April 2000.

Please see excerpted table of requested analyses below:

Description of requested analytical services

Compounds/Analytes	Number of Samples	Matrix	Methods by Number	Type of Data Deliverable and Turn Around Time: 21 days	
				Preliminary Data*	Data Package
VOCs (CLPAS)	21	Water	OLC03.2/SW846 8260B	EDD or faxed HCDD	HCDD. EDD
VOCs (CLPAS)	21	Water	OLM04.2/SW846 8260B	"	"

Total TAL Metals (CLPAS)	31	Water	ILM04.1/SW846 6010B/7471	"	"
Dissolved TAL Metals (CLPAS)	31	Water	ILM04.1/SW846 6010B/7470	"	"
Total Cyanide	31	Water	ILM04.1/EPA 335.3	"	"
1,4-Dioxane	15	Water	SW846 8270C w/ SIM or isotopic dilution	"	"
Perchlorate	31	Water	EPA 314.0/EPA 300.0M	"	"

*** Note: EDD = Electronic Data Deliverable HCDD = Hard Copy Data Deliverable**

RFA - Data Deliverables, Turn Around Times, and Distribution

Type of Data Deliverable	**Turn Around Time** [4]	**Data Distribution (include name and email)**
Preliminary Data (via email) [1]		1. EPA RPM/SAM (by default) 2. 3.
Final Data [2]	21/35 days	1. EPA RPM/SAM (by default) 2. Bill.Clarke@westonsolutions.com 3.
Data Package [3]		EPA RPM/SAM (by default)

NOTES:
1. Preliminary data will be sent to EPA RPM/SAM upon request only. Additional copies will be furnished to no more than 2 other project personnel.
2. Final data is sent to EPA RPM/SAM by default. Additional copies will be furnished to no more than 2 other project personnel.
3. Data packages from CLP and EMAX will be sent directly to the EPA RPM/SAM. Brownfields grantees may request that copies of CLP data packages be sent to them. EPA Region 9 Laboratory data packages are housed on-site and are archived to the Federal Records Center on a periodic basis.
4. Choose turn around times for laboratory data deliverables from the table below. If expedited turn around times are requested, provide project based justification below in the RFA - Supplemental Information section. Requests for expedited turn around times will be evaluated on a project by project basis and may be negotiated during the scheduling of laboratory services. Requesting expedited turn around times does not constitute implicit agreement by

any of the laboratories to provide data within that time frame.

Available Turn Around Times	**Standard**		**Expedited (upon special request only)**				
CLP		21 days		14 days	7 days	48 hours	24 hours
EPA Region 9 Laboratory	35 days		21 days	14 days	7 days	48 hours	24 hours
Regional Contract Laboratory	35 days			14 days	7 days		

RFA - Supplemental Information

Include description of expanded or reduced analyte lists, modified quantitation or reporting limits, specialized preparation or analytical procedures, specialized sampling devices (e.g., EnCore), etc. Add additional rows as needed.

VOC QLs per OLC03.2/OLM04.2 OK
1,4-dioxane QL 2 ug/L
Estimate three VOC samples with individual analytes > 10,000 ug/L
Estimate six VOC samples with individual analytes >1,000 ug/L, < 10,000 ug/L
Estimate seven VOC samples with individual analytes >200 ug/L, < 1,000 ug/L
Estimate one 1,4-dioxane sample with >10,000 ug/L
Estimate one 1,4-dioxane sample with >250 ug/L, < 10,000 ug/L

Request For Data Review

Add additional rows as needed.

Compounds/Analytes	**Tier**	**Percentage Level**
CLP VOCs	2	100
CLP inorganics, 1,4-dxa, ClO4	1A (CADRE or manual)	100

	Turn Around Times[2]	**Distribution**
Data Review Reports[1]	60 VOCs/35 all others	EPA RPM/SAM (by default)

NOTES:

1. Data Review reports are sent to EPA RPM/SAM by default. Additional copies can be obtained from the EPA RPM/SAM.
2. Choose turn around times for data review reports from the table below. Turn around times are based upon dates data packages are received by the data reviewers. Ability to meet requested data review turn around times is contingent upon availability of services and may be negotiated during the scheduling of data review services. It is recommended for long term monitoring projects that a turn around time of 60 days be selected.

Available Turn Around Times	60 days	45 days	35 days

Request For Data Review - Supplemental Information

Include description of compounds of concern, action levels, targeted samples, etc. Add additional rows as needed.

PMD Points of Contact for Plan Review, Scheduling of Analytical Services, and Data Review

Point of Contact	Services	Phone Number	Internet / Email Address
Quality Assurance Office Main	For general Quality Assurance Office assistance and/or to have your call forwarded to the appropriate staff person.	(415) 972-3805	http://www.epa.gov/region09/qa/index.html
Region 9 Laboratory Main	For general Region 9 Laboratory assistance and/or to have your call forwarded to the appropriate staff person.	(510) 412-2300	http://www.epa.gov/region09/lab/index.html
David Taylor	Status of Plan Reviews and Approval	(415) 972-3803	taylor.david@epa.gov
Carl Brickner	Request of Analytical Services	(415) 972-3814	brickner.carl@epa.gov
Richard Bauer	Region 9 Laboratory Analytical Services and Results	(510) 412-2312	bauer.richard@epa.gov
Region 9 Laboratory Sample Receiving Phone Line	Region 9 Laboratory Sample Shipment Notification	(510) 412-2377	n/a
Greg Nagle	Region 9 Laboratory Field Services	(510) 412-2334	nagle.greg@epa.gov
Richard Freitas	Contract Laboratory Program (CLP) Analytical Services and Results	(415) 972-3804	freitas.richard@epa.gov
Steve Remaley	Special CLP Analytical Services (Dioxins, Asbestos, etc.) and Results	(415) 972-3802	remaley.steve@epa.gov
Marlon Mezquita	EMAX Analytical Services and Results	(415) 972-3808	mezquita.marlon@epa.gov
Rose Fong	ESAT Data Review Services	(415) 972-3812	fong.rose@epa.gov

Mary O'Donnell	Contract Data Review Services	(415) 972-3811	odonnell.mary@epa.gov

00501044

Author: Richard Bauer/R9/USEPA/US **Date:** 01/15/2004 12:04 PM

TECHNICAL DIRECTION FORM # 00501044

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical Split Sampling

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 1/15/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	VOCs, 1,4-dioxane
R04S33	soil	up to 5

Instructions: Analyze up to 5 soil samples for VOCs and 1,4-dioxane following R9 Lab SOPs for method 5035/8260 and 3545/8270C.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report each SDG	30 days from receipt of last sample in

Sampling Dates: 01/20/04--01/21/04: split sampling

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	Lab
3	Soil	VOC's	5053 (Encore Samplers)	R9 Lab
3	Soil	1,4 Dioxane	8270	R9 Lab

Lab Assignment Number **Case**
R9 Lab Case # R04S33

Turn Around Times:
Std (35 days)

Data Distribution:
EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Electronic copy report: Tom Perina
Dan Jablonski, CH>@M Hill (djablon1@ch2m.com)

Lab Assignments Forwarded

RFA - Supplemental Information:

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Company **Due Date**

Turn Around Times:

Supplemental Data Validation Information :
1.

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Tom Perina
Company: CH@M Hill
Office Phone Number: 909-890-9857

Mobile Phone Number: 714-227-3324
Email: mladeau@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC form rec'd via email on 01/13/04 from Dan Jablonski, CH@M HILL.

Omega OU-1 RSCC Form January 2004.d

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method or R9 Lab SOP number)	Matrix	No. of samples
Method 5035 (Encore Samplers) for VOCs in Soil	Soil	3
Method 8270C for 1,4 Dioxane in Soil	Soil	3

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

A full documentation package, including raw data and sample custody documentation, will be generated and kept on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Vance Fong at the Region 9 Quality Assurance Office.

ICF CONSULTING

SFUND RECORDS CTR
2070539

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

DATE: February 20, 2004

TO: Richard Bauer, Chemistry TOPO, EPA Region 9, Laboratory Section, PMD-2

FROM: Ziyad Rajabi, Organic Group Leader

SUBJECT: Analytical Results for TDF 00501044

As assigned under EPA Contract No. 68-W-01-028, TDF 00501044, ESAT completed analysis of four soil and one water samples for the Omega Chemical project, Case R04S33, SDG 04021B, Work Order(s) 0401063, 0401075 for VOCs following EPA Region 9 Laboratory SOP(s) 305 based on EPA Methods 8260A and 5035 for soil sample and SOP(s) 354 based on EPA Methods 524.2 for water sample. The draft analytical report and raw data package are attached.

Work is in progress on the remaining tasks assigned under this TDF. If you have any questions regarding this information please contact me at extension 22390.

00501052

Author: Richard Bauer/R9/USEPA/US **Date:** 02/20/2004 09:22 AM

TECHNICAL DIRECTION FORM # 00501052 (revised)

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME:** Omega Chemical Oversight Sampling

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 2/20/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	VOCs, **1,4-dioxane**
R04S41	water	up to 20

Instructions: Analyze up to 20 water samples for VOCs **and for 1,4-dioxane** following R9 Lab SOPs for method 524.2 **and for 3520/8270C**.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report each SDG	30 days from receipt of last sample in

Revised to add 1,4-dioxane

Sampling Dates: 02/24/04--02/26/04: OMEGA Chemical Superfund Site OU1 Remedial Investigation/Feasibility Study Oversight

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
16	W	VOCs	524.2	35	R9 Lab

Data Distribution:
EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

Lab Assignment Number **Case**

R9 Lab Case # R04S41

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Turn Around Times:

Supplemental Data Validation Information :
1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Tom Perina
Company: CH@M Hill
Office Phone Number: 909-890-9857
Mobile Phone Number: 714-227-3324
Email: mladeau@ch2m.com
Office Address: CH@M Hill

164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC form rec'd via email on 02/11/04 from Dan Jablonski, CH@M HILL. Revised form received 2/17 from Tom Perina.

OU-1 RSCC Form February 2004.dc Omega OU-1 RSCC Form February 2004(revise

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method or R9 Lab SOP number)	Matrix	No. of samples
VOCs (EPA Method 8260)	Water	10
Duplicates (EPA Method 8260)	Water	3
Lab QC (EPA Method 8260)	Water	1
Field Blanks (EPA Method 8260)	Water	2
Total Samples	Water	16

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

A full documentation package, including raw data and sample custody documentation, will be generated and kept on file at the EPA Region 9 Laboratory. If you would like to request additional review and/or validation of the data, please contact Vance Fong at the Region 9 Quality Assurance Office.

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method or R9 Lab SOP number)	Matrix	No. of samples
See description below this table*	Water	16

*The analyses for volatile organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low level organic statement of work or larger sample volumes may be used to attain lower level organic detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP.
Required detection limits are listed below.

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

VOLATILE ORGANIC AANALYTES AND REQUIRED DETECTION LEVELS

Parameter	Laboratory Target Reporting Limit (µg/L)
Acetone	10
Benzene	0.50
Bromobenzene	1.0
Bromochloromethane	1.0
Bromodichloromethane	1.0
Bromoform	1.0
Bromomethane	1.0
n-Butylbenzene	1.0
sec-Butylbenzene	0.50
tert-Butylbenzene	1.0
Carbon tetrachloride	0.50
Chlorobenzene	1.0
Chloroethane	1.0
Chloroform	1.0
Chloromethane	1.0
2-Chlorotoluene	1.0
4-Chlorotoluene	1.0
Dibromochloromethane	1.0
1,2-Dibromo-3-chloropropane	5.0
1,2-Dibromoethane	1.0
Dibromomethane	1.0
1,2-Dichlorobenzene	0.50
1,3-Dichlorobenzene	1.0
1,4-Dichlorobenzene	1.0
Dichlorodifluoromethane (Freon 12)	5.0
1,1-Dichloroethane	0.50
1,2-Dichloroethane	0.50
1,1-Dichloroethene	0.50
cis-1,2-Dichloroethene	0.50
trans-1,2-Dichloroethene	0.50
1,2-Dichloropropane	1.0

Parameter	Laboratory Target Reporting Limit (µg/L)
1,3-Dichloropropane	1.0
2,2-Dichloropropane	0.50
1,1-Dichloropropene	1.0
cis-1,3-Dichloropropene	0.50
trans-1,3-Dichloropropene	0.50
Ethylbenzene	1.0
Hexachlorobutadiene	1.0
Isopropylbenzene	1.0
p-Isopropyltoluene	1.0
Methylene chloride	10
Methyl tert-butyl ether	10
Naphthalene	1.0
n-Propylbenzene	1.0
Styrene	1.0
1,1,1,2-Tetrachloroethane	1.0
1,1,2,2-Tetrachloroethane	1.0
Tetrachloroethene	0.50
Toluene	0.50
1,2,3-Trichlorobenzene	1.0
1,2,4-Trichlorobenzene	1.0
1,1,1-Trichloroethane	0.50
1,1,2-Trichloroethane	0.50
Trichloroethene	0.50
Trichlorofluoromethane (Freon 11)	0.50
1,2,3-Trichloropropane	1.0
Trichlorotrifluoroethane (Freon 113)	5.0
1,2,4-Trimethylbenzene	1.0
1,3,5-Trimethylbenzene	1.0
Vinyl chloride	0.50
o-Xylene	1.0
m,p-Xylenes	1.0

00501053

Author: Richard Bauer/R9/USEPA/US **Date:** 03/01/2004 03:08 PM

TECHNICAL DIRECTION FORM # 00501053

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 3/1/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	1,4-dioxane, perchlorate, metals, TKN, NH3, Total P, alkalinity, TOC, cyanide, anions
R04S42	water	up to 30

Instructions: Analyze up to 30 water samples for 1,4-dioxane, perchlorate, metals (full list including B, SiO4), TKN, ammonia, total phosphorus, alkalinity, total organic carbon, cyanide, anions (full list) following R9 Lab SOPs for method for EPA methods 3520/8270C,314.0, 200.7, 200.8, 245.1, 351.2, 350.1, 365.4, SM 2320, 415.1, 335.4, 300.0.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report each SDG	30 days from receipt of last sample in

Sampling Dates: 03/01/04--03/05/04: OMEGA Chemical Superfund Site OU 2: Remedial Investigation/Feasibility Study Oversight

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
24	W	TAL metals + boron, silicon and cyabide		21	R9 Lab
24	W	1,4 dioxane	R9L SOP 315	35	R9 Lab
24	W	ClO4	R9L SOP 314	35	R9 Lab
22	W	Br, Cl, Fl, nitrate-N, nitrite-N, O-phosphate, P, sulfate.	EPA 300		35 R9 Lab
22	W	TKN	EPA 351.2	35	R9 Lab
22	W	Ammonia	EPA 350.2	35	R9 Lab
22	W	Total Phosphorus	EPA 365.4	35	R9 Lab
22	W	TDS	EPA 160	35	R9 Lab
22	W	Alkalinity	SM 2320B	35	R9 Lab
22	W	TOC	EPA 415.1	35	R9 Lab
22	W	BOD	SM 5210B	35	R9 Lab?

Lab Assignment Case Number

R9 Lab Case # R04S42

Lab Assignments Forwarded

Data Distribution:
EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form, Section 7.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Turn Around Times:

Supplemental Data Validation Information :
1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Tom Perina
Company: CH@M Hill
Office Phone Number: 909-890-9857
Mobile Phone Number: 714-227-3324
Email: mladeau@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

Omega OU-2 RSCC Form February 2004.d

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study	
Proposed Sampling Dates: March 1-5, 2004	
EPA Project Contact: Christopher Lichens	**Mail Code:** SFD-7-4

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 164 West Hospitality Lane, Suite 2, San Bernardino, CA 92408	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 909.890.9857	**Office Fax:** 909.890.9847
Sampler (if different from above): Dan Jablonski	**E-mail:** djablon1@ch2m.com
Office Phone: 909.890.0371	**Mobile Phone:** 909.858.8714

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Oversight (CH2M HILL, 2004).

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Requested TAT: Standard

Standard turn around time is 35 days. Faster turn around or preliminary report may be available upon request.

Section 5

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.
Electronic report copy (as .pdf file)	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)
Electronic Data Deliverable (EDD)*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

* Excel table. Other EDD formats may be available upon request

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method or R9 Lab SOP number)*	Matrix	No. of samples
TCL Volatile organics, plus MTBE,(CLP, see description below this table	water	24
TCL[a] Semivolatile Organic Compounds (CLP)	water	24
TAL metals plus boron and silicon, and Cyanide (CLP)	water	24
1,4-dioxane, R9 Lab SOP315 (per 8270, R9 lab)	water	24
Perchlorate (EPA 314, R9 lab)	water	24
Br, Cl, Fl, nitrate-N, nitrite-N, orthophosphate P, sulfate (EPA(300)	water	22
Total Kjeldahl Nitrogen (TKN) (EPA 351.2, R9 lab)	water	22
Ammonia (EPA 350.2, R9 lab)	water	22
Total phosphorus (EPA 365.4, R9 lab)	water	22
Total Dissolved Solids, TDS, (EPA 160, R9 lab)	water	22
Alkalinity (SM 2320B, R9 lab)	water	22
Total Organic Carbon (EPA 415.1, R9 lab)	water	22
BOD (SM 5210B, R9 lab)	water	22

*see below (7) for detection limits and method references

Section 7

Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

Analytes, methods, detection limits:

TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)
TCL[a] Semivolatile Organic Compounds (SVOCs)	CLP [b]	(c)
TAL [a] Metals (field-filtered) plus Boron, Silicon and cyanide	EPA 200.7[d,b] EPA 200.8[d,b] EPA 245.1 EPA335.4/CLP	(g)
1,4-Dioxane	EPA 8270 [b]	1 µg/L
Perchlorate	EPA 314 [b ,d,]	5 µg/L
Bromide	EPA 300.0[d,b]	1.0 mg/L
Chloride	EPA 300.0[d,b]	1.0 mg/L
Fluoride	EPA 300.0[d,b]	0.1 mg/L
Nitrate-N	EPA 300.0[d,b]	0.1 mg/L
Nitrite-N	EPA 300.0[d,b]	0.1 mg/L
Orthophosphate-P	EPA 300.0[d,b]	1.0 mg/L
Total Sulfate	EPA 300.0[d,b]	1.0 mg/L
Total Kjeldahl Nitrogen (TKN)	EPA 351.2[d,b]	0.3 mg/L
Ammonia	EPA 350.2[d,b]	0.3 mg/L
Total Phosphorus	EPA 365.4[d,b]	0.3 mg/L
Total Dissolved Solids (TDS)	EPA 160.1[d,b]	20 mg/L
Alkalinity	SM 2320B[.b, e]	20 mg/L
Total Organic Carbon	EPA 415.1[d]	2.0 mg/L

BOD	SM 5210B[e]	3 mg/L

[a] Target Compound List (TCL) and Target Analyte List (TAL) per EPA CLP. MTBE: methyl tert-butyl ether.
[b] Volatile organics, semivolatile organics, metals and cyanide may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B, depending on availability. For other analytes the analyses will be carried out by EPA Regional Laboratory or a contract laboratory.
[c] For volatile organics, detection limits will be at 1 ppb for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B.
[d] U.S. Environmental Protection Agency, 1979. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, revised March 1983; U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste*, SW846.
[e] *Standard Methods for the Examination of Water and Wastewater*, 17th Edition (1989).
[f] State of California Department of Health Services (DHS) Method Determination of Perchlorate by Ion Chromatography, as detailed in EPA Region IX SOP.
[g] Detection limits provided in Appendix B along with methods for the specific metals. Silicon to be determined as silica by EPA 200.7 and will have a detection level < 0.1 ppm.
[h] Target detection level is reporting level.

.

Company: CH@M Hill
Office Phone Number: 909-890-9857
Mobile Phone Number: 714-227-3324
Email: mladeau@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC form rec'd via email on 03/12/04 from Tom Perina, CH@M HILL.

Omega OU-1 RSCC Form March 2004

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method or R9 Lab SOP number)	Matrix	No. of samples
Semi-volatile organics, CLP, see description below this table*	soil	3
Pesticides and PCBs, CLP, see description below this table*	soil	3
Metals, CLP, see description below this table*	soil	3
Soil gas volatile organics ** (R9 laboratory procedure)	soil gas	3
Air volatile organics** (R9 laboratory procedure)	air	3

*The analyses for the organics and metals listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP. Required detection limits are listed below.
** See section 7 for analyte list and needed detection levels

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

SOIL

Parameter			Laboratory Target Reporting Limit (mg/kg)[2]
Metals			
Antimony			10.0
Arsenic			0.5
Barium			1.0
Beryllium			1.0
Cadmium			0.50
Chromium			20
Cobalt			10.0
Copper			2.0
Lead			10.0
Mercury			0.10
Molybdenum			3.0
Nickel			2.0
Selenium			3.0
Silver			1.0
Thallium			6.0
Vanadium			1.0
Zinc			1.0
Semi-volatile Organic Compounds			
Base/Neutral Extractables			
1,4- dioxane			lab specific
1,2,4-Trichlorobenzene			0.7
1,2-Dichlorobenzene			0.7
1,3-Dichlorobenzene			0.7
1,4-Dichlorobenzene			0.7
2,4-Dinitrotoluene			0.7
2,6-Dinitrotoluene			0.7
2-Chloronaphthalene			0.7
2-Methylnaphthalene			0.7

SOIL

Parameter			Laboratory Target Reporting Limit (mg/kg)[2]
2-Nitroaniline			3.3
3-Nitroaniline			3.3
3,3'-Dichlorobenzidine			1.3
4-Bromophenyl phenyl ether			0.7
4-Chloroaniline			1.3
4-Chlorophenyl phenyl ether			0.7
4-Nitroaniline			3.3
Acenaphthylene			0.7
Acenaphthene			0.7
Anthracene			0.7
Benz(a)anthracene			0.7
Benzo(a)pyrene			0.7
Benzo(b)fluoranthene			0.7
Benzo(g,h,l)perylene			0.7
Benzl alcohol			1.3
Bis(2-chloroethoxy)methane			0.7
Bis(2-chloroethyl)ether			0.7
Bis(2-chloroisopropyl)ether			0.7
Bis(2-ethylhexyl)phthalate			0.7
Butyl benzylphthalate			0.7
Chrysene			0.7
Di-n-butylphthalate			0.7
Di-n-octylphthalate			0.7
Dibenz(a,h)anthracene			0.7
Dibenzofuran			0.7
Diethyl phthalate			0.7
Dimethyl phthalate			0.7
Fluoranthene			0.7
Fluorene			0.7
Hexachlorobenzene			0.7
Hexachlorobutadiene			0.7
Hexachlorocyclopentadiene			0.7
Hexachloroethane			0.7
Indeno(1,2,3-cd)pyrene			0.7
Isophorone			0.7
n-Nitrosodiphenylamine			0.7
n-Nitrosodi-n-propylamine			0.7
Naphthalene			0.7

Parameter			Laboratory Target Reporting Limit (mg/kg)[2]
Nitrobenzene			0.7
Phenanthrene			0.7
Pyrene			0.7
SVOCs: Acid Extractables			
2,4,5-Trichlorophenol			3.3
2,4,6-Trichlorophenol			0.3
2,4-Dichlorophenol			0.3
2,4-Dimethylphenol			0.3
2,4-Dinitrophenol			3.3
2-Chlorophenol			0.3
2-Methylphenol			0.3
2-Nitrophenol			0.3
4,6-Dinitro-2-methylphenol			3.3
4-Chloro-3-methylphenol			1.3
4-Methylphenol			0.3
4-Nitrophenol			1.6
Benzoic Acid			1.6
Pentachlorophenol			3.3
Phenol			0.3
Pesticides and Polychlorinated Biphenyls			
Organochlorine Pesticides			
α-BHC			0.019
β-BHC			0.033
δ-BHC			0.011
γ-BHC (Lindane)			0.020
α-Chlordane			0.015
γ-Chlordane			0.015
4,4'-DDD			0.042
4,4'-DDE			0.025
4,4'-DDT			0.036
Aldrin			0.022
Dieldrin			0.035
Endosulfan I			0.021
Endosulfan II			0.024
Endosulfan Sulfate			0.036
Endrin			0.036
Endrin Aldehyde			0.016

SOIL

Parameter			Laboratory Target Reporting Limit (mg/kg)[2]
Heptachlor			0.020
Heptachlor Epoxide			0.021
Methoxychlor			0.057
Toxaphene			0.57
Polychlorinated Biphenyls			
PCB-1016			0.70
PCB-1221			0.70
PCB-1232			0.70
PCB-1242			0.70
PCB-1248			0.70
PCB-1254			0.70
PCB-1260			0.70

Notes:
[1]EPA Region IX Preliminary Remediation Goals (PRGs) for residential soils.
[2]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.
— No Standard

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
Volatile Organic Compounds			
Acetone			10
Benzene			2.0
Bromobenzene			NT
Bromochloromethane			NT
Bromodichloromethane			2.0
Bromoform			2.0
Bromomethane			2.0
n-Butylbenzene			NT
sec-Butylbenzene			NT
tert-Butylbenzene			NT
Carbon tetrachloride			2.0
Chlorobenzene			2.0
Chloroethane			4.0
Chloroform			2.0
Chloromethane			4.0
2-Chlorotoluene			NT
4-Chlorotoluene			NT
Dibromochloromethane			2.0
1,2-Dibromo-3-chloropropane			NT
1,2-Dibromoethane			2.0
Dibromomethane			NT
1,2-Dichlorobenzene			2.0
1,3-Dichlorobenzene			NT
1,4-Dichlorobenzene			2.0
Dichlorodifluoromethane (Freon 12)			2.0
1,1-Dichloroethane			2.0
1,2-Dichloroethane			2.0
1,1-Dichloroethene			2.0
cis-1,2-Dichloroethene			2.0
trans-1,2-Dichloroethene			2.0
1,2-Dichloropropane			2.0
1,3-Dichloropropane			NT
2,2-Dichloropropane			NT
1,1-Dichloropropene			NT
cis-1,3-Dichloropropene			2.0

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
trans-1,3-Dichloropropene			2.0
Ethylbenzene			2.0
Hexachlorobutadiene			4.0
Isopropylbenzene			NT
p-Isopropyltoluene			NT
Methylene chloride			2.0
Methyl tert-butyl ether			NT
Naphthalene			NT
n-Propylbenzene			NT
Styrene			2.0
1,1,1,2-Tetrachloroethane			NT
1,1,2,2-Tetrachloroethane			2.0
Tetrachloroethene			2.0
Toluene			2.0
1,2,3-Trichlorobenzene			NT
1,2,4-Trichlorobenzene			2.0
1,1,1-Trichloroethane			2.0
1,1,2-Trichloroethane			2.0
Trichloroethene			2.0
Trichlorofluoromethane (Freon 11)			2.0
1,2,3-Trichloropropane			NT
Trichlorotrifluoroethane (Freon 113)			2.0
1,2,4-Trimethylbenzene			2.0
1,3,5-Trimethylbenzene			2.0
Vinyl chloride			2.0
o-Xylene			2.0
m,p-Xylenes			2.0

Notes:
[1]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.

N/A – Not applicable
NT – Not a target analyte

Mobile Phone Number: 714-227-3324
Email: mladeau@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

00501078

Author: Richard Bauer/R9/USEPA/US **Date:** 06/02/2004 07:54 AM

TECHNICAL DIRECTION FORM # 00501078

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: B01 **DATE:** 6/2/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	1,4-dioxane, perchlorate, TKN, NH3, Total P, alkalinity, TOC, cyanide, anions
R04S63	water	up to 35

Instructions: Analyze up to 35 water samples for 1,4-dioxane, perchlorate, TKN, ammonia, total phosphorus, alkalinity, total organic carbon, cyanide, anions (full list) following R9 Lab SOPs for method for EPA methods 3520/8270C, 314.0, 351.2, 350.1, 365.4, SM 2320, 415.1, 335.4, 300.0.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report	30 days from receipt of last sample in each SDG

Sampling Dates: 06/01/04--06/10/04: OMEGA Chemical Superfund Site OU 2: Remedial Investigation/Feasibility Study Oversight

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
36	W	VOCs + MTBE	OCL03.2	21	CLP
33	W	SVOCs		21	CLP
33	W	TAL metals + boron, silicon and cyabide		21	CLP
33	W	1,4 dioxane	R9L SOP 315	35	R9 Lab
33	W	Cyanide	EPa 335.4	35	R9Lab
33	W	ClO4	R9L SOP 314	35	R9 Lab
33	W	Br, Cl, Fl, nitrate-N, nitrite-N, O-phosphate, P, Tot. sulfate.	EPA 300	35	R9 Lab
33	W	TKN	EPA 351.2	35	R9 Lab
33	W	Ammonia	EPA 350.2	35	R9 Lab
33	W	Total Phosphorus	EPA 365.4	35	R9 Lab
33	W	TDS	EPA 160	35	R9 Lab
33	W	Alkalinity	SM 2320B	35	R9 Lab
33	W	TOC	EPA 415.1	35	R9 Lab
33	W	BOD	SM 5210B	35	R9 Lab
33	W	hex. chrome	218.6	35	R9 Lab
33	W	COD	SM5520D		USACE
33	W	NDMA	1625		USACE

Lab Assignment Case Number

R9 Lab Case # R04S63

CLP Case #

Lab Assignments Forwarded

36	W	1,2,3-TCP	USACE

Data Distribution:

EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form, Sections 6- 7.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level	Company	Due Date

Turn Around Times:

Supplemental Data Validation Information :

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Contractor PO: Tom Perina
Sampler: Dan Jablonsky
Company: CH@M Hill
Office Phone Number: 909-890-9857
Mobile Phone Number: 714-227-3324
Email: djablon1@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

Omega OU-2 RSCC Form June 2004 quarterly gw.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study	
Proposed Sampling Dates: June 1 to June 10, 2004	
EPA Project Contact: Christopher Lichens	**Mail Code:** SFD-7-4

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 164 West Hospitality Lane, Suite 2, San Bernardino, CA 92408	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 909.890.9857	**Office Fax:** 909.890.9847
Sampler (if different from above): Dan Jablonski	**E-mail:** djablon1@ch2m.com
Office Phone: 909.890.0371	**Mobile Phone:** 909.858.8714

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Oversight (CH2M HILL, 2004).

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Requested TAT: Standard

Standard turn around time is 35 days. Faster turn around or preliminary report may be available upon request.

Section 5

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.
Electronic report copy (as .pdf file)	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)
Electronic Data Deliverable (EDD)*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

* Excel table. Other EDD formats may be available upon request

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[(h)]	Matrix	Number of Samples
Volatile Organic Compounds				
TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)	Water	36
TCL[a] Semivolatile Organic Compounds (SVOCs)	CLP [b]	(c)	Water	33
Emergent Compounds				
1,2,3-TCP	(i)	0.005 µg/L	Water	36
1,4-Dioxane	EPA 8270 [b]	1 µg/L	Water	33
NDMA	Modified EPA Method 1625 [b]	0.02 µg/L	Water	33
Perchlorate	EPA 314 [b ,d,]	5 µg/L	Water	33
Hexavalent Chromium	EPA 218.6 [b, d]	0.2 µg/L	Water	33
Groundwater Treatment and Discharge Parameters				
TAL [a] Metals (field-filtered) plus Boron, Silicon	EPA 200.7[d,b] EPA 200.8[d,b] EPA 245.1/CLP	(g)	Water	33
Cyanide	EPA 335.4[d,b]	10 mg/L	Water	33
Bromide	EPA 300.0[d,b]	1.0 mg/L	Water	33
Chloride	EPA 300.0[d,b]	1.0 mg/L	Water	33
Fluoride	EPA 300.0[d,b]	0.1 mg/L	Water	33
Nitrate-N	EPA 300.0[d,b]	0.1 mg/L	Water	33
Nitrite-N	EPA 300.0[d,b]	0.1 mg/L	Water	33
Orthophosphate-P	EPA 300.0[d,b]	1.0 mg/L	Water	33
Total Sulfate	EPA 300.0[d,b]	1.0 mg/L	Water	33
Total Kjeldahl Nitrogen (TKN)	EPA 351.2[d,b]	0.3 mg/L	Water	33
Ammonia	EPA 350.2[d,b]	0.3 mg/L	Water	33
Total Phosphorus	EPA 365.4[d,b]	0.3 mg/L	Water	33
Total Dissolved Solids (TDS)	EPA 160.1[d,b]	20 mg/L	Water	33
Alkalinity	SM 2320B [b, e]	20 mg/L	Water	33
Total Organic Carbon	EPA 415.1[d]	2.0 mg/L	Water	33

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[h]	Matrix	Number of Samples
BOD	SM 5210B[e]	3 mg/L	Water	33
COD	SM5220D[e]	5.0 mg/L	Water	

[a] Target Compound List (TCL) and Target Analyte List (TAL) as shown in Table 2 and Appendix B of the QAPP (CH2M HILL, 2004). MTBE: methyl tert-butyl ether.
[b] Volatile organics, semivolatile organics, metals and cyanide may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. For other analytes, the analyses will be carried out by EPA Regional Laboratory or a Contract Laboratory. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP.
[c] For volatile organics, detection limits will be at 1 part per billion (ppb) for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B of the QAPP.
[d] U.S. Environmental Protection Agency, 1979. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, revised March 1983; U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste*, SW846.
[e] *Standard Methods for the Examination of Water and Wastewater*, 17th Edition (1989).
[f] State of California Department of Health Services (DHS) Method Determination of Perchlorate by Ion Chromatography, as detailed in EPA Region IX SOP in Appendix B of the QAPP.
[g] Detection limits provided in Appendix B of the QAPP along with methods for the specific metals. Silicon to be determined as silica by EPA 200.7 and will have a detection level < 0.1 part per million (ppm).
[h] Target detection level is reporting level, see text for explanation.

i The method and QA/QC will follow California State guidance to achieve the needed low regulatory limit. Laboratory-specific standard operating procedures will be defined prior to start of work, and subsequent to selection of laboratory.

Notes:
1) Above sample numbers include 2 lab QC, 3 field duplicates, 2 ambient blanks, and 1 equipment blank.
2) Trip blanks will not be included in this sampling round.
3) See below (7) for expanded analyte list

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Volatile Organic Compounds					
Acetone	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Benzene		1	CA Primary MCL [A]	0.5	0.15 [E]
Bromodichloromethane		100	USEPA Primary MCL [C]	0.5	2.5 [I] ; 100-proposed [A]
Bromoform	Evaluate water treatment system design.	100	USEPA Primary MCL [C]	0.5	45 [I] ; 100-proposed [A]
Bromomethane		500	CA Proposition 65 Regulatory Level [I]	0.5	
n-Butylbenzene	Evaluate remedial action performance.	260	CA DHS State Action Level [F]		
sec-Butylbenzene		260	CA DHS State Action Level [F]		
Carbon disulfide		160	CA DHS State Action Level [F]		
Carbon tetrachloride		0.5	CA Primary MCL [A]	0.5	0.1 [E]
Chlorobenzene		100	USEPA Primary MCL [C]		50 [H]
Chloroethane		16	Other Taste and Odor [H]	0.5	100 [I]
Chloroform					
Chloromethane			No Applicable ARAR		
2-Chlorotoluene		140	CA DHS State Action Level [F]		
4-Chlorotoluene		140	CA DHS State Action Level [F]		
Cyclohexane					
Dibromomethane					
Dibromochloromethane					
Dibromochloropropane (DBCP)		0.2	USEPA Primary MCL [C]		0.05 [I]
1,2-Dibromoethane		0.05			0.1 [I]
1,2-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [E]

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
1,3-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [F]
1,4-Dichlorobenzene		5	CA Primary MCL [A]	0.5	6 [E]
Dichlorodifluoromethane		1,000	CA DHS State Action Level [F]		
1,1-Dichloroethane	Exceedances with respect to federal and state drinking water standards, and state action levels.	5	CA Primary MCL [A]	0.5	3 [E]
1,2-Dichloroethane		0.5	CA Primary MCL [A]	0.5	0.4 [E]
1,1-Dichloroethylene		6	CA Primary MCL [A]	0.5	7 [C]; 10 [E]
cis-1,2-Dichloroethylene	Evaluate water treatment system design.	6	CA Primary MCL [A]	0.5	70 [C]
trans-1,2-Dichloroethylene		10	CA Primary MCL [A]	0.5	100 [C]
Dichloromethane (Methylene Chloride)	Evaluate remedial action performance.	5	CA/USEPA Primary MCL [A] [C]	0.5	4 [E]
1,2-Dichloropropane		5	CA/USEPA Primary MCL [A] [C]	0.5	0.5 [E]
2,2-Dichloropropane					
1,1-Dichloropropene					
1,3-Dichloropropene		0.5	CA Primary MCL [A]		
cis-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
trans-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
Ethane					
Ethene					
Ethybenzene		300	CA Primary MCL [A])	0.5	700 [C]; 300 [E]; 29 [H]
Hexachlorobutadiene					
2-Hexanone					
Isopropylbenzene (Cumene)		770	CA DHS State Action Level [F]	0.5	
Methane					
Methyl acetate					
Methyl ethyl ketone		8,400	Other Taste and Odor [H]	5	
Methyl isobutyl ketone (MIBK)		120	CA DHS State Action Level [F]		1300 [H]
Methylcyclohexane					

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Napthalene		170	CA DHS State Action Level [F]		
n-Propylbenzene		260	CA DHS State Action Level [F]		

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Styrene	Exceedances with respect to federal and state drinking water standards, and state action levels.	100	CA/USEPA Primary MCL [A] [C]	0.5	11 [H]
1,1,2,2-Tetrachloroethane		1	CA Primary MCL [A]	0.1	0.5 [E];1.5 [I]
Tetrachloroethylene (PCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.06 [E]
Toluene	Evaluate water treatment system design.	150	CA Primary MCL [A]/CA PHG [E]	0.5	42 [H]; 1,000 [C]
1,2,3-Trichlorobenzene					
1,2,4-Trichlorobenzene	Evaluate remedial action performance.	5	CA Primary MCL [A]/CA PHG [E]	0.5	70 [C]
1,1,1-Trichloroethane (1,1,1-TCA)		200	CA/USEPA Primary MCL [A] [C]	0.5	
1,1,2-Trichloroethane		5	CA/USEPA Primary MCL [A] [C]	0.5	5 [I]
Trichloroethylene (TCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.8 [E]
Trichlorofluoromethane		150	CA Primary MCL [A]	5	700 [E]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		1,200	CA Primary MCL [A]	10	4,000 [E]
1,2,4-Trimethylbenzene		330	CA DHS State Action Level [F]		
1,3,5-Trimethylbenzene		330	CA DHS State Action Level [F]		
Vinyl chloride		0.5	CA Primary MCL [A]	0.5	0.05 [E]; 2 [C]
Xylene(s)		1,750	CA Primary MCL [A]	1,800	17 [H]; 10,000 [C]
Additional Volatiles					
Methyl tert-butyl ether (MTBE)	Exceedances with respect to federal and state drinking water standards, and state action levels	`13	CA Secondary MCL [B]	3	13 [E]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Semivolatile Organic Compounds					
Acenaphthene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Acenaphthylene					
Acetophenone					
Aniline (Phenylamine) (Aminobenzene)	Evaluate water treatment system design.				
Anthracene	Evaluate remedial action performance.				
Benzaldehyde					
Benzoic Acid (Carboxybenzene)					
Benzo(a)anthracene					
Benzo(a)pyrene		0.2	CA/USEPA Primary MCL [A,] [C]	0.1	0.004 [E]
Benzo(b)fluoranthene					
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Benzyl Alcohol (Phenylmethanol)					
1,1'-Biphenyl					
Bis(2-chloroethoxy)methane					
Bis(2-chloroethyl)ether					
Bis(2-chloroisopropyl)ether					
4-Bromophenyl-phenyl ether					
Butylbenzyl phthalate (BBP)					
Caprolactam					
Carbazole					
4-Chloro-3-methylphenol					
4-Chloroaniline					

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
2-Chloronaphthalene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
2-Chlorophenol					
4-Chlorophenyl-phenyl ether					
Chrysene	Evaluate water treatment system design.				
Di(2-ethylhexyl)adipate		400	CA/USEPA Primary MCL [A] [C]	5	200 [E]
Di(2-ethylhexyl)phthalate	Evaluate remedial action performance.	4	CA Primary MCL [A]	3	6 [C]; 12 [E]
Dibenz(a,h)anthracene					
Dibenzofuran (Diphenylene oxide)					
3,3'-Dichlorobenzidine					
2,4-Dichlorophenol					
Diethyl phthalate (DEP)					
Dimethyl phthalate					
2,4-Dimethylphenol		100	CA DHS State Action Level [F]		
4,6-Dinitro-2-methylphenol					
2,4-Dinitrophenol					
2,4-Dinitrotoluene					
2,6-Dinitrotoluene					
Di-n-butylphthalate (Dibutyl phthalate)					
Di-n-octylphthalate(Dioctyl phthalate)					
Endothall		100	CA/USEPA Primary MCL [A,] [C]	45	580 [E]
Fluoranthene (Idryl)					
Fluorene					
Glyphosate		700	CA/USEPA Primary MCL [A] [C]	25	1,000 [E]
Hexachlorobenzene		1	CA/USEPA Primary MCL [A] [C]	0.5	0.03 [E]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [(1)]	California DHS DLR (µg/L) [(2)]	Additional Regulatory Limits (µg/L)
Hexachlorocyclopentadiene	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	CA/USEPA Primary MCL [(A) (C)]	1	50 [(E)]
Hexachloroethane					
Indeno(1,2,3-cd)pyrene					
Isophorone	Evaluate water treatment system design.				
2-Methylnaphthalene					
2-Methylphenol	Evaluate remedial action performance.				
4-Methylphenol					
3,4-Methylphenol					
2-Nitroaniline					
3-Nitroaniline					
2-Nitrophenol					
4-Nitroaniline					
4-Nitrophenol					
Pentachlorophenol		1	CA/USEPA Primary MCL [(A) (C)]	0.2	0.4 [(E)]
Phenanthrene					
Phenol		4,200	CA DHS State Action Level [(F)]		
Pyrene					
Pyridine					
2,4,6-Trichlorophenol					
2,4,5-Trichlorophenol					
Emergent Compounds	Exceedances with respect to federal and state drinking water standards, and state action levels.				
1,4-Dioxane		3	CA DHS State Action Level [(F)]		15 [(I)]
N-Nitrosodimethylamine (NDMA)		0.01	CA DHS State Action Level [(F)]		0.02 [(I)]
1,2,3-Trichloropropane (1,2,3-TCP)	Evaluate water treatment system design.	0.005	CA DHS State Action Level [(F)]		

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (2)	Additional Regulatory Limits (µg/L)
Treatment/Discharge Parameters					
Total Organic Parameters	Evaluate groundwater treatment alternatives.				
Total Organic Carbon					
Biological Oxygen Demand	Evaluate treated groundwater discharge alternatives.				
Chemical Oxygen Demand					

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) California Department of Health Services required Detection limit for Purposes of Reporting (DLR).

(3) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Department of Health Services State Action Level for Taste and Odor.

(H) Other Taste and Odor Thresholds.

(I) CA Proposition 65 Regulatory Level for Drinking Water.

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Emergent Compounds					
Chromium (VI)	Exceedances with respect to federal and state drinking water standards, and state action levels.	11 (0.2) [4]	California Toxics Rule for Aquatic Life Protection [H]	1	
Perchlorate		4	CA DHS State Action Level [F]	4 (preliminary)	
	Evaluate water treatment system design.				
TAL Inorganics					
Aluminum	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	USEPA Secondary MCL [D]11	50	200 [B]; 600 [E]
Antimony		6	CA/USEPA Primary MCL [A] [C]	6	20 [E]
Arsenic		10	USEPA Primary MCL [C]	2	50 [A]; 0.004 [E]
Barium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	1,000	CA Primary MCL [A]	100	2,000 [C] [E]
Beryllium		4	CA/USEPA Primary MCL [A] [C]	1	1 [E]
Cadmium		5	CA/USEPA Primary MCL [A] [C]	1	0.07 [E]; 2.6 [3] [H]
Calcium					
Chromium (total)		50	CA Primary MCL [A]	10	100 [C]
Cobalt					
Copper		11 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	170 [E] ; 1300 [F]
Iron		300	CA/USEPA Secondary MCL [B] [D]	100	
Lead		3.1	California Toxics Rule for Aquatic Life Protection [H]	5	15 [F]; 2 [E]; 0.25 [G]
Magnesium					
Manganese		50	CA/USEPA Secondary MCL [B] [D]	20	
Mercury		2	CA/USEPA Primary MCL [A] [C]	1	1.2 [E]
Molybdenum					
Nickel		61	California Toxics Rule for Aquatic Life Protection [H]	10	100 [A];12 [E]
Potassium					
Selenium		5	California Toxics Rule for Aquatic Life Protection [H]	5	50 [A] [C]
Silver	Exceedances with respect	4.7 [2]	California Toxics Rule for Aquatic Life Protection [I]	10	100 [B] [D]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Sodium	to federal and state drinking water standards, and state action levels.				
Thallium		2.0	CA/USEPA Primary MCL [A] [C]	1	0.1 [E]
Vanadium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	50	CA DHS State Action Level [F]	3 (preliminary)	
Zinc		140 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	5,000 [B] [D]
Cyanide		5.2	California Toxics Rule for Aquatic Life Protection [H]	100	200 [C];150 [E]
Additional Inorganics					
Boron	Evaluate groundwater treatment alternatives and treated groundwater discharge options	1,000	CA DHS State Action Level [F]		
Silicon					
Treatment/Discharge Parameters					
pH	Evaluate groundwater treatment alternatives and treated groundwater discharge options	6.5 to 8.5	USEPA Secondary MCL [D]		
Alkalinity					
Ammonia		500	Other Tastes and Odors [J]		
Bicarbonate	Exceedances with respect to federal and state drinking water standards, and state action levels				
Bromide					
Chloride		250,000	CA/USEPA Secondary MCL [B,D]		
Fluoride		1,000	CA PHG [E]	100	2,000 [A] [D]
Nitrate (as N)		10,000	USEPA Primary MCL [C]		10,000 [E]
Nitrite (as N)		1,000	CA/USEPA Primary MCL [A] [C]	400	1,000 [E]
Phosphorus (orthophosphate, total phosphorus)					
Sulfate		250,000	CA Secondary MCL [B]	500	250,000 [D]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (3)	Additional ARARs (µg/L)
Total dissolved solids (TDS)	Evaluate groundwater treatment alternatives and treated groundwater discharge options Exceedances with respect to federal and state drinking water standards, and state action levels	250,000	CA/USEPA Secondary MCL (B,D)		

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(3) California Department of Health Services required Detection Limit for Purposes of Reporting (DLR).

(4) 0.2 µg/L detection level is needed for comparability to other databases in the region per previous DHS limit.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Proposition 65 Regulatory Level for Drinking Water.

(H) California Toxics Rule for Freshwater Aquatic Life Protection - Continuous (4-day average) Concentration.

(I) California Toxics Rule for Freshwater Aquatic Life Protection - Maximum (1-hr average) Concentration.

(J) Other Taste and Odor Thresholds.

Sampling Dates: Emergency sampling for illegal spill within the Omega OU1 site

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	Lab
8	air	VOCs	TO-15	R9L

Lab Assignment Number **Case**

R9 Lab Case # R04S77

TAT
Rush prelim results 48 hour
14 day TAT

Data Distribution:
EDD (CH2M-Hill format): tperina@ch2m.com
.pdf report copy: tperina@ch2m.com

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Turn Around Times:

Supplemental Data Validation Information :
1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Tom Perina
Company: CH@M Hill

Office Phone Number: 909-890-9857
Mobile Phone Number: 714-227-3324
Email:
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Sampling dates: 8/24/04 - 8/26/04

OMEGA Chemical Superfund Site OU1 Remedial Investigation/Feasibility Study Oversight

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
4	W	VOCs (see analyte list & spec. det. limits)	524.2	21	R9L
4	W	1,4 dioxane	8270	21	R9 Lab

Lab Assignment Number **Case**

R9 Lab Case # R04S81

Data Distribution:
EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

Lab Assignments Forwarded

Supplemental Information

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
all	3	100

Company **Due Date**

Turn Around Times:

21 days

Supplemental Data Validation Information :
1.

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name:	Dan Jablonsk	Contractor Project Manager: Tom Perina	
Company:	CH@M Hill	Office phone:	909-890-9857
Office Phone Number:	909-890-9857	email:	tperina@ch2m.com
Mobile Phone Number:	949-302-4364		
Email:	djablon1@ch2m.com		
Office Address:	CH@M Hill 164 West Hospitality Lane, Suite 2 San Bernardino, CA 92408		

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-1 RSCC _082304.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method or R9 Lab SOP number)	Matrix	No. of samples
VOCs (EPA 8260)	Water	4
1,4-Dioxane (EPA 8270)	Water	4

*The analyses for the organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP.
Required detection limits are listed below.
** See section 7 for analyte list and needed detection levels

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

TABLE 1
Data Uses and Needs – Groundwater

Parameter	Laboratory Target Reporting Limit (µg/L)
Volatile Organic Compounds	
Acetone	10
Benzene	0.50
Bromobenzene	1.0
Bromochloromethane	1.0
Bromodichloromethane	1.0
Bromoform	1.0
Bromomethane	1.0
n-Butylbenzene	1.0
sec-Butylbenzene	0.50
tert-Butylbenzene	1.0
Carbon tetrachloride	0.50
Chlorobenzene	1.0
Chloroethane	1.0
Chloroform	1.0
Chloromethane	1.0
2-Chlorotoluene	1.0
4-Chlorotoluene	1.0
Dibromochloromethane	1.0
1,2-Dibromo-3-chloropropane	5.0
1,2-Dibromoethane	1.0
Dibromomethane	1.0
1,2-Dichlorobenzene	0.50
1,3-Dichlorobenzene	1.0
1,4-Dichlorobenzene	1.0
Dichlorodifluoromethane (Freon 12)	5.0
1,1-Dichloroethane	0.50
1,2-Dichloroethane	0.50
1,1-Dichloroethene	0.50
cis-1,2-Dichloroethene	0.50
trans-1,2-Dichloroethene	0.50
1,2-Dichloropropane	1.0
1,3-Dichloropropane	1.0
2,2-Dichloropropane	0.50
1,1-Dichloropropene	1.0
cis-1,3-Dichloropropene	0.50
trans-1,3-Dichloropropene	0.50
Ethylbenzene	1.0

TABLE 1
Data Uses and Needs – Groundwater

Parameter	Laboratory Target Reporting Limit (µg/L)
Volatile Organic Compounds (Continued)	
Hexachlorobutadiene	1.0
Isopropylbenzene	1.0
p-Isopropyltoluene	1.0
Methylene chloride	10
Methyl tert-butyl ether	10
Naphthalene	1.0
n-Propylbenzene	1.0
Styrene	1.0
1,1,1,2-Tetrachloroethane	1.0
1,1,2,2-Tetrachloroethane	1.0
Tetrachloroethene	0.50
Toluene	0.50
1,2,3-Trichlorobenzene	1.0
1,2,4-Trichlorobenzene	1.0
1,1,1-Trichloroethane	0.50
1,1,2-Trichloroethane	0.50
Trichloroethene	0.50
Trichlorofluoromethane (Freon 11)	0.50
1,2,3-Trichloropropane	1.0
Trichlorotrifluoroethane (Freon 113)	5.0
1,2,4-Trimethylbenzene	1.0
1,3,5-Trimethylbenzene	1.0
Vinyl chloride	0.50
o-Xylene	1.0
m,p-Xylenes	1.0
Emergent Compounds	
1,4-Dioxane	2.0

Task Order 005

ESAT 68-W0-1028
(68-W-01-028)

TECHNICAL DIRECTION NO. 00505002

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU-2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp

TO NUMBER: 005 68-W-01-028 ICF Consulting **DATE:** 10-3-03

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package Information **Project Information:**

Case# 32073 Data type VO EPA Site Manager Chris Lichens SDG# Y0ZP5, P8 & R6 Mail Code SFD-7-4 Laboratory CEIMIC, MITK

[ ] EPA-Lead Non-CLP [ ] REAP EMAX

Y0ZP5.WK4 Y0ZP8.WK4 Y0ZR6.WK4

Level of Review:

Tier 2 (Tier 3-level review of PCE and its degradation products, freons, and BTEX.)

Deliverable	**Due date**
[X] Validation Reports	10-29-03

Pkgs to ESAT: 10-6

2010252

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: 005
Technical Direction No.: 00505002

DATE: October 21, 2003

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	32073
SDG NO.:	Y0ZP5
LABORATORY:	CEIMIC Corporation (CEIMIC)
ANALYSIS:	Volatiles
SAMPLES:	18 Water Samples
COLLECTION DATE:	August 19, 21, 25, 26, and 27, 2003
REVIEWER:	Santiago Lee, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Jennie Han-Liu, CLP PO USEPA Region 1
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [ ] Yes. [X] No

Data Validation Report - Tier 2

Case No.:	32073	SDG No.:	Y0ZP5
Site:	Omega Chem OU-2		
Laboratory:	CEIMIC Corporation		
Reviewer:	Santiago Lee, ESAT/LDC		
Date:	October 21, 2003		

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0ZP0 through Y0ZP3, Y0ZP5, Y0ZP6, Y0ZP7, Y0ZP9, Y0ZQ0, Y0ZR0, Y0ZR2, Y0ZR3, Y0ZR5, Y0ZS0, Y0ZS1, Y0ZS3, Y0ZS5, and Y0ZS6
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLM04.3
Collection Date:	August 19, 21, 25, 26, and 27, 2003
Sample Receipt Date:	August 21 , 22, 26, and 28, 2003
Extraction Date:	Not Applicable
Analysis Date:	August 27, 28, and 29, 2003 and September 2 and 4, 2003

FIELD QC:

Trip Blanks (TB):	Y0ZS1, Y0ZS3, Y0ZS5, and Y0ZS6
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0ZP1 and Y0ZP2
Field Duplicates (D2):	Y0ZP5 and Y0ZP6

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKPE:	Y0ZS1 and Y0ZS3
VBLKPF:	Y0ZP5, Y0ZP6, and Y0ZP7
VBLKPG:	Y0ZP0, Y0ZP1, and Y0ZP2
VBLKPL:	Y0ZS5 and Y0ZS6
VBLKPO:	Y0ZR0
VBLKQC:	Y0ZP3
VBLKQD:	Y0ZP9, Y0ZQ0, Y0ZR2, Y0ZR3, Y0ZR5, Y0ZR5MS, Y0ZR5MSD, Y0ZS0 and VHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review
2:	Calibration Summary

CLP PO ACTION:

None.

CLP PO ATTENTION:

Detected results and quantitation limits for some analytes are qualified as estimated (J) due to continuing calibration problems.

SAMPLING ISSUES:

None.

ADDITIONAL COMMENTS:

As directed by the EPA Task Order Project Officer (TOPO), a Tier 2 review (Tier 3-level review of tetrachloroethene and its degradation products [i.e., trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, 1,2-dichloroethane, chloroethane, and vinyl chloride], freons, and benzene, toluene, ethylbenzene, and xylenes [BTEX]) was performed.

Relative response factors (RRFs) reported on Forms 7A and 7B for the 8/27/03 continuing calibration were incorrect. The laboratory has corrected the RRFs and submitted revised Forms 7A and 7B (attached).

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Organics Analysis,* OLM04.3, 1999; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES/PRESERVATION	YES	
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	B
LABORATORY BLANKS	YES	
FIELD BLANKS	YES	
SURROGATES	YES	
MATRIX SPIKE/DUPLICATES	YES	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, C
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	YES	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibration, and are flagged "J" in Table 1A.

- Chloroethane in samples Y0ZP5, Y0ZP6, and Y0ZP7 and method blank VBLKPF
- Dichlorodifluoromethane in samples Y0ZS5 and Y0ZS6 and method blank VBLKPL
- Dichlorodifluoromethane, chloroethane, and 1,1-dichloroethene in sample Y0ZR0 and method blank VBLKPO
- trans-1,2-Dichloroethene in samples Y0ZP9, Y0ZQ0, Y0ZR2, Y0ZR3, Y0ZR5, and Y0ZS0, storage blank VHBLK01, and method blank VBLKQD

Percent differences exceeding the ±25.0% validation criterion were observed for the analytes listed above in the continuing calibrations performed on August 28, 2003 and September 2, 4, and 5, 2003 (see Table 2).

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

C. Samples Y0ZP3, Y0ZP5, Y0ZP6, Y0ZP7, Y0ZP9, Y0ZQ0, Y0ZR0, Y0ZR2, Y0ZR3 and Y0ZS0 were analyzed at 25-fold, 10-fold, 10-fold, 20-fold, 20-fold, 5-fold, 1000-fold, 25-fold, 25-fold, and 100-fold dilutions, respectively, due to high levels of target analytes. The CRQLs listed for these samples in Table 1A have been multiplied by the dilution factor.

2010253

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: 005
Technical Direction No.: 00505002

DATE: October 22, 2003

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	32073
SDG NO.:	Y0ZR6
LABORATORY:	Ceimic Corporation (CEIMIC)
ANALYSIS:	Volatiles
SAMPLES:	4 Water Samples
COLLECTION DATE:	August 28, 2003
REVIEWER:	Stan Kott, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Jennie Han-Liu, CLP PO USEPA Region 1
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report - Tier 2

Case No.:	32073	SDG No.:	Y0ZR6
Site:	Omega Chem OU-2		
Laboratory:	Ceimic Corporation (CEIMIC)		
Reviewer:	Stan Kott, ESAT/LDC		
Date:	October 22, 2003		

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0ZR6, Y0ZR7, Y0ZR8, and Y0ZS8
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLM04.3
Collection Date:	August 28, 2003
Sample Receipt Date:	September 2, 2003
Extraction Date:	Not Applicable
Analysis Date:	September 6 and 8, 2003

FIELD QC:

Trip Blanks (TB):	Y0ZS8
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y0ZR6 and Y0ZR7

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLKQE:	Y0ZR6, Y0ZR7, and Y0ZR8
VBLKQF:	Y0ZS8, Y0ZR8DL, Y0ZR6MS, Y0ZR6MSD, and storage blankVHBLK01

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

CLP PO ACTION:

None.

CLP PO ATTENTION:

Detected results and quantitation limits for dichlorodifluoromethane are qualified as estimated (J) due to continuing calibration problems.

SAMPLING ISSUES:

The sample cooler arrived at the laboratory at a temperature of 13.0°C. Since this temperature exceeds the 4.0° ±2.0°C statement of work (SOW) criterion, results for all samples are estimated (J) due to possible low bias.

There was no sample designated for laboratory QC on the Traffic Report/Chain of Custody Record (TR/COC) form. The laboratory informed Region 9 that sample Y0ZR6 was used as the laboratory QC sample.

ADDITIONAL COMMENTS:

As directed by the EPA Task Order Project Officer (TOPO), a Tier 2 review (Tier 3-level review of tetrachloroethene and its degradation products [i.e., trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, 1,2-dichloroethane, chloroethane, and vinyl chloride], freons, and benzene, toluene, ethylbenzene, and xylenes [BTEX]) was performed.

Standard preparation logs are missing in the data package and cannot be evaluated. This information was requested from the laboratory but has not been received to date. Data are not qualified in this report due to missing standard preparation logs. Refer to the attached telephone record log for details.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Organics Analysis,* OLM04.3, 1999; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES/PRESERVATION	NO	B
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	C
LABORATORY BLANKS	YES	
FIELD BLANKS	YES	
SURROGATES	YES	
MATRIX SPIKE/DUPLICATES	YES	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	YES	
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, D
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	YES	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Detected results and quantitation limits for the following analytes are qualified as estimated due to a cooler temperature that exceeds the SOW criterion, and are flagged "J" in Table 1A.

- All analytes in all samples

The sample cooler arrived at the laboratory at a temperature of 13.0°C. This temperature exceeds the 4.0° ±2.0°C SOW criterion. Analytical results for all the samples may be biased low. Where the results are nondetected, false negatives may exist.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibrations, and are flagged "J" in Table 1A.

- Dichlorodifluoromethane in all samples and all blanks

Percent differences of 50.6% and 53.9% for dichlorodifluoromethane in the continuing calibrations performed on September 6, 2003 and September 8, 2003, respectively, exceeded the ±25.0% validation criterion.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

D. Sample Y0ZR8 was reanalyzed at a 2-fold dilution due to a high level of 1,1,2-trichloro-1,2,2-trifluoroethane that exceeded the calibration range. The result for this analyte is reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

3010 234

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Project Officer RF
Quality Assurance (QA) Office, PMD-3

FROM: Doug Lindelof, Data Review and QA Document Review Task Manager
Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Task Order: 005
Technical Direction No.: 00505002

DATE: October 27, 2003

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

SITE:	Omega Chem OU-2
SITE ACCOUNT NO.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
CASE NO.:	32073
SDG NO.:	Y0ZP8
LABORATORY:	Mitkem Corporation (MITKEM)
ANALYSIS:	Volatiles
SAMPLES:	19 Water Samples
COLLECTION DATE:	August 19, 20, 21, 22, 26, and 27, 2003
REVIEWER:	Santiago Lee, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA Task Order Project Officer (TOPO) for the ESAT Contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Jennie Han-Liu, CLP PO USEPA Region 1
Steve Remaley, CLP PO USEPA Region 9
ESAT File

CLP PO: [ ] FYI [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report - Tier 2

Case No.:	32073	SDG No.: Y0ZP8
Site:	Omega Chem OU-2	
Laboratory:	Mitkem Corporation (MITKEM)	
Reviewer:	Santiago Lee, ESAT/LDC	
Date:	October 27, 2003	

I. Case Summary

SAMPLE INFORMATION:

Samples:	Y0XT0, Y0ZP4, Y0ZP8, Y0ZQ1 through Y0ZQ9, Y0ZR1, Y0ZR4, Y0ZR9, Y0ZS2, Y0ZS4, Y0ZS7, and Y0ZS9
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	August 19, 20, 21, 22, 26, and 27, 2003
Sample Receipt Date:	August 21, 22, 23, and 28, 2003
Extraction Date:	Not Applicable
Analysis Date:	August 25, 26, and 28, 2003 and September 4, 5, and 6, 2003

FIELD QC:

Trip Blanks (TB):	Y0XT0, Y0ZS2, Y0ZS4, and Y0ZS7
Field Blanks (FB):	Not Provided
Equipment Blanks (EB):	Y0ZS9
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Not Provided

METHOD BLANKS AND ASSOCIATED SAMPLES:

VBLK1R:	Y0ZP8, Y0ZQ2, and Y0ZQ8
VBLK1S:	Y0ZQ3, Y0ZQ4, Y0ZQ5, Y0ZS2, Y0ZQ8DL, Y0ZP8DL, and Y0ZQ2DL
VBLK1T:	Y0ZQ5DL, Y0XT0, Y0ZP4, Y0ZQ1, Y0ZQ6, Y0ZQ7, Y0ZQ9, Y0ZS4, Y0ZQ1DL, and Y0ZQ6DL
VBLK5N:	Y0ZR1
VBLK5P:	Y0ZR1DL, Y0ZR4, and Y0ZR9
VBLK5Q:	Y0ZS7, Y0ZS9, YZR4DL, Y0ZR9DL, and VHBLK5Q

TABLES:

1A:	Analytical Results with Qualifications
1B:	Data Qualifier Definitions for Organic Data Review

CLP PO ACTION:

None.

CLP PO ATTENTION:

1) Detected results and quantitation limits for some analytes are qualified as estimated (J) due to continuing calibration problems.

2) Detected results and quantitation limits for some analytes are qualified as estimated (J) due to deuterated monitoring compound (DMC) recovery problems.

3) Detected results and quantitation limits for some analytes are qualified as estimated (J) due to internal standard (IS) area problems.

SAMPLING ISSUES:

Sample Y0ZQ3 was designated for "laboratory QC" on the Traffic Report and Chain of Custody Record (TR/COC). The Sample Management Office (SMO) informed the laboratory that no MS/MSD was required for Region 9 volatile OLC03.2 analysis.

ADDITIONAL COMMENTS:

1,1-Dichloroethene (0.65 μg/L) and trichloroethene (0.53 μg/L) detected in sample Y0ZR9 may be due to carry-over from sample Y0ZR4 (110 μg/L and 32 μg/L, respectively) because no instrument blank separated these consecutively analyzed samples.

As directed by the EPA Task Order Project Officer (TOPO), a Tier 2 review (Tier 3-level review of tetrachloroethene and its degradation products [i.e., trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, 1,2-dichloroethane, chloroethane, and vinyl chloride], Freons, and benzene, toluene, ethylbenzene, and xylenes [BTEX]) was performed.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Analysis of Low Concentration Organic,* OLC03.2, December 2000; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review*, June 2001.

II. Validation Summary

	Acceptable/Comment	
HOLDING TIMES/PRESERVATION	NO	E
GC/MS TUNE/GC PERFORMANCE	YES	
INITIAL CALIBRATIONS	YES	
CONTINUING CALIBRATIONS	NO	B
LABORATORY BLANKS	YES	
FIELD BLANKS	YES	
DEUTERATED MONITORING COMPOUNDS	NO	C
MATRIX SPIKE/DUPLICATES	N/A	
LABORATORY CONTROL SAMPLE/DUPLICATES	N/A	
INTERNAL STANDARDS	NO	D
COMPOUND IDENTIFICATION	YES	
COMPOUND QUANTITATION	YES	A, F
SYSTEM PERFORMANCE	YES	
FIELD DUPLICATE SAMPLE ANALYSIS	N/A	

N/A = Not Applicable

III. Validity and Comments

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Detected results and quantitation limits for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibration, and are flagged "J" in Table 1A.

- Dichlorodifluoromethane, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane in samples Y0ZQ3, Y0ZQ4, Y0ZQ5, and Y0ZS2 and method blank VBLK1S

Percent differences of +31.4%, +42.7%, and -35.6% were observed for dichlorodifluoromethane, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane, respectively, in the continuing calibration performed on August 26, 2003. These values exceed the ±30.0% validation criterion.

The DMC 1,1-dichloroethene-d2 (-46.8%) also had a %D that exceeded the ±30.0% validation criterion in the continuing calibration performed on August 26, 2003. Quantitation of the analytes associated with this DMC (trans-1,2-dichloroethene and cis-1,2-dichloroethene) may have been affected by the high %D.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

C. Detected results and quantitation limits for the following analytes are qualified as estimated due to DMC recoveries outside QC limits, and are flagged "J" in Table 1A.

{1,1-Dichloroethene-d2}
- cis-1,2-Dichloroethene in samples Y0ZQ4 and Y0ZQ8

{1,2-Dichloroethane-d4}
- 1,1-Dichloroethene and 1,1,2-trichloro-1,2,2-trifluoroethane in samples Y0ZQ1 and Y0ZQ6
- 1,1-Dichloroethene in sample Y0ZQ9

{Toluene-d8}
- Trichloroethene, toluene, tetrachloroethene, ethylbenzene, and xylenes (total) in sample Y0ZQ5
- Trichloroethene and tetrachloroethene in samples Y0ZR4 and Y0ZR9

DMC recoveries outside QC limits for the analytes listed above are shown below.

Sample	DMC	% Recovery	QC Limits
Y0ZQ4	1,1-Dichloroethene-d2	146	65-130
Y0ZQ8	1,1-Dichloroethene-d2	180	65-130
Y0ZQ1	1,2-Dichloroethane-d4	136	78-129
Y0ZQ6	1,2-Dichloroethane-d4	138	78-129
Y0ZQ9	1,2-Dichloroethane-d4	134	78-129
Y0ZQ5	Toluene-d8	74	77-120
Y0ZR4	Toluene-d8	124	77-120
Y0ZR9	Toluene-d8	132	77-120

Detected results for affected analytes where DMC recoveries fell below QC limits may be biased low; where results are nondetected, false negatives may exist. Detected results for affected analytes where DMC recoveries exceeded QC limits may be biased high. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are qualified. The samples were not reanalyzed.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

D. Detected results and quantitation limits for the following analytes are qualified as estimated due to low internal standard areas, and are flagged "J" in Table 1A.

{Chlorobenzene-d5}

- Benzene, trichloroethene, toluene, tetrachloroethene, ethylbenzene, and xylenes (total) in samples Y0ZR4 and Y0ZR9

Internal standard areas outside QC limit for the analytes listed above are shown below.

Sample	Internal Standard	Area	QC Limits
Y0ZR4	1,4-Dichlorobenzene-d_4	555,415	597,206-1,393,481
Y0ZR9	1,4-Dichlorobenzene-d_4	545,797	597,206-1,393,481

Detected results and quantitaion limits for the affected analytes are considered quantitatively questionable. Where results are nondetected, false negatives may exist. The samples were not reanalyzed.

Internal standards, introduced into every calibration standard, blank, sample, and QC sample, monitor changes in analyte response due to matrix effects and fluctuations in instrument sensitivity throughout the analytical sequence. Internal standards are used to quantitate the concentration of target analytes and surrogate standards.

E. Detected results and quantitation limits for the following analytes are qualified as estimated due to an air bubble in the samples, and are flagged "J" in Table 1A.

- All analytes in samples Y0XT0 and Y0ZS2

Samples Y0ZS2 and Y0XT0 (trip blanks) were received with an air bubble, about the size of a quarter, in all of the vials. Detected results for the samples listed above may be biased low. Where the results are nondetected, false negatives may exist.

F. Samples Y0ZP8 and Y0ZQ5 were reanalyzed at 6-fold and 2-fold dilution, respectively, due to high levels of trichloroethene that exceeded the calibration range. Results for trichloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Samples Y0ZQ1, Y0ZQ8, and Y0ZR1 were reanalyzed at 2-fold, 3-fold, and 10-fold dilution, respectively, due to high levels of tetrachloroethene that exceeded the calibration range. Results for tetrachloroethene are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Samples Y0ZQ2 and Y0ZQ6 were reanalyzed at 20-fold dilutions due to high levels of trichloroethene and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted samples in Table 1A; results for all other analytes are reported from the undiluted samples.

Sample Y0ZR4 was reanalyzed at a 10-fold dilution due to high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, trichloroethene, and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

Sample Y0ZR9 was reanalyzed at a 5-fold dilution due to high levels of trichlorofluoromethane and 1,1,2-trichloro-1,2,2-trifluoroethane that exceeded the calibration range. Results for these analytes are reported from the diluted sample in Table 1A; results for all other analytes are reported from the undiluted sample.

00501099

Author: Richard Bauer/R9/USEPA/US **Date:** 09/01/2004 04:24 PM

TECHNICAL DIRECTION FORM # 00501099

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: 005 **DATE:** 9/1/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	1,4-dioxane, perchlorate, TKN, NH3, Total P, alkalinity, TOC, anions
R04S85	water	up to 35

Instructions: Analyze up to 35 water samples for 1,4-dioxane, perchlorate, TKN, ammonia, total phosphorus, alkalinity, total organic carbon, anions (full list) following R9 Lab SOPs for method for EPA methods 3520/8270C, 314.0, 351.2, 350.1, 365.4, SM 2320, 415.1, 300.0.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report each SDG	30 days from receipt of last sample in

Sampling Dates: 09/06/04--09/10/04:

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
24	W	VOCs + MTBE	OCL03.2	21	CLP
22	W	SVOCs		21	CLP
22	W	TAL metals + boron, silicon	EPA 200.7, 200.8,245.1/CLP	21	CLP
22	W	1,4 dioxane	R9L SOP 315	35	R9 Lab
22	W	Cyanide	EPA 335.4	21	CLP
22	W	ClO4	R9L SOP 314	35	R9 Lab
22	W	Br, Cl, Fl, nitrate-N, nitrite-N, O-phosphate, P, Tot. sulfate.	EPA 300	35	R9 Lab
22	W	TKN	EPA 351.2	35	R9 Lab
22	W	Ammonia	EPA 350.2	35	R9 Lab
22	W	Total Phosphorus	EPA 365.4	35	R9 Lab
22	W	TDS	EPA 160	35	R9 Lab
22	W	Alkalinity	SM 2320B	35	R9 Lab
22	W	TOC	EPA 415.1	35	R9 Lab
22	W	BOD	SM 5210B	35	R9 Lab
22	W	hex. chrome	218.6	35	USACE

Lab Assignment Case Number

R9 Lab Case # R04S85

CLP Case #

Lab Assignments Forwarded

22	W	COD	SM5520D	USACE
22	W	NDMA	1625	USACE
24	W	1,2,3-TCP		USACE

Data Distribution:

EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form, Sections 6- 7.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level	Company	Due Date

Turn Around Times:

Supplemental Data Validation Information :

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Contractor PO: Tom Perina
Sampler: Dan Jablonsky
Company: CH@M Hill
Office Phone Number: 909-890-9857
Mobile Phone Number: 714-227-3324
Email: djablon1@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2

San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-2 RSCC _ September 2004.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study	
Proposed Sampling Dates: September 6 to September 10, 2004	
EPA Project Contact: Christopher Lichens	**Mail Code:** SFD-7-4

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 164 West Hospitality Lane, Suite 2, San Bernardino, CA 92408	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 909.890.9857	**Office Fax:** 909.890.9847
Sampler (if different from above): Dan Jablonski	**E-mail:** djablon1@ch2m.com
Office Phone: 909.890.0371	**Mobile Phone:** 949.307.4364

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004).

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Requested TAT: Standard

Standard turn around time is 35 days. Faster turn around or preliminary report may be available upon request.

Section 5

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.
Electronic report copy (as .pdf file)	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)
Electronic Data Deliverable (EDD)*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

* Excel table. Other EDD formats may be available upon request

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[(h)]	Matrix	Number of Samples
Volatile Organic Compounds				
TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)	Water	24
TCL[a] Semivolatile Organic Compounds (SVOCs)	CLP [b]	(c)	Water	22
Emergent Compounds				
1,2,3-TCP	(i)	0.005 µg/L	Water	24
1,4-Dioxane	EPA 8270 [b]	1 µg/L	Water	22
NDMA	Modified EPA Method 1625 [b]	0.02 µg/L	Water	22
Perchlorate	EPA 314 [b ,d,]	5 µg/L	Water	22
Hexavalent Chromium	EPA 218.6 [b, d]	0.2 µg/L	Water	22
Groundwater Treatment and Discharge Parameters				
TAL [a] Metals (field-filtered) plus Boron, Silicon	EPA 200.7[d,b] EPA 200.8[d,b] EPA 245.1/CLP	(g)	Water	22
Cyanide	EPA 335.4[d,b]	10 mg/L	Water	22
Bromide	EPA 300.0[d,b]	1.0 mg/L	Water	22
Chloride	EPA 300.0[d,b]	1.0 mg/L	Water	22
Fluoride	EPA 300.0[d,b]	0.1 mg/L	Water	22
Nitrate-N	EPA 300.0[d,b]	0.1 mg/L	Water	22
Nitrite-N	EPA 300.0[d,b]	0.1 mg/L	Water	22
Orthophosphate-P	EPA 300.0[d,b]	1.0 mg/L	Water	22
Total Sulfate	EPA 300.0[d,b]	1.0 mg/L	Water	22
Total Kjeldahl Nitrogen (TKN)	EPA 351.2[d,b]	0.3 mg/L	Water	22
Ammonia	EPA 350.2[d,b]	0.3 mg/L	Water	22
Total Phosphorus	EPA 365.4[d,b]	0.3 mg/L	Water	22
Total Dissolved Solids (TDS)	EPA 160.1[d,b]	20 mg/L	Water	22
Alkalinity	SM 2320B [b, e]	20 mg/L	Water	22
Total Organic Carbon	EPA 415.1[d]	2.0 mg/L	Water	22

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[h]	Matrix	Number of Samples
BOD	SM 5210B[e]	3 mg/L	Water	22
COD	SM5220D[e]	5.0 mg/L	Water	22

[a] Target Compound List (TCL) and Target Analyte List (TAL) as shown in Table 2 and Appendix B of the QAPP (CH2M HILL, 2004). MTBE: methyl tert-butyl ether.
[b] Volatile organics, semivolatile organics, metals and cyanide may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. For other analytes, the analyses will be carried out by EPA Regional Laboratory or a Contract Laboratory. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP.
[c] For volatile organics, detection limits will be at 1 part per billion (ppb) for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B of the QAPP.
[d] U.S. Environmental Protection Agency, 1979. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, revised March 1983; U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste*, SW846.
[e] *Standard Methods for the Examination of Water and Wastewater*, 17th Edition (1989).
[f] State of California Department of Health Services (DHS) Method Determination of Perchlorate by Ion Chromatography, as detailed in EPA Region IX SOP in Appendix B of the QAPP.
[g] Detection limits provided in Appendix B of the QAPP along with methods for the specific metals. Silicon to be determined as silica by EPA 200.7 and will have a detection level < 0.1 part per million (ppm).
[h] Target detection level is reporting level, see text for explanation.

i The method and QA/QC will follow California State guidance to achieve the needed low regulatory limit. Laboratory-specific standard operating procedures will be defined prior to start of work, and subsequent to selection of laboratory.

Notes:
1) Above sample numbers include 1 lab QC, 2 field duplicates, and 3 ambient blanks.
2) Trip blanks will not be included in this sampling round.
3) See below (7) for expanded analyte list

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Volatile Organic Compounds					
Acetone	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Benzene		1	CA Primary MCL [A]	0.5	0.15 [E]
Bromodichloromethane		100	USEPA Primary MCL [C]	0.5	2.5 [I] ; 100-proposed [A]
Bromoform	Evaluate water treatment system design.	100	USEPA Primary MCL [C]	0.5	45 [I] ; 100-proposed [A]
Bromomethane		500	CA Proposition 65 Regulatory Level [I]	0.5	
n-Butylbenzene	Evaluate remedial action performance.	260	CA DHS State Action Level [F]		
sec-Butylbenzene		260	CA DHS State Action Level [F]		
Carbon disulfide		160	CA DHS State Action Level [F]		
Carbon tetrachloride		0.5	CA Primary MCL [A]	0.5	0.1 [E]
Chlorobenzene		100	USEPA Primary MCL [C]		50 [H]
Chloroethane		16	Other Taste and Odor [H]	0.5	100 [I]
Chloroform					
Chloromethane			No Applicable ARAR		
2-Chlorotoluene		140	CA DHS State Action Level [F]		
4-Chlorotoluene		140	CA DHS State Action Level [F]		
Cyclohexane					
Dibromomethane					
Dibromochloromethane					
Dibromochloropropane (DBCP)		0.2	USEPA Primary MCL [C]		0.05 [I]
1,2-Dibromoethane		0.05			0.1 [I]
1,2-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [E]

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
1,3-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [F]
1,4-Dichlorobenzene		5	CA Primary MCL [A]	0.5	6 [E]
Dichlorodifluoromethane		1,000	CA DHS State Action Level [F]		
1,1-Dichloroethane	Exceedances with respect to federal and state drinking water standards, and state action levels.	5	CA Primary MCL [A]	0.5	3 [E]
1,2-Dichloroethane		0.5	CA Primary MCL [A]	0.5	0.4 [E]
1,1-Dichloroethylene		6	CA Primary MCL [A]	0.5	7 [C]; 10 [E]
cis-1,2-Dichloroethylene	Evaluate water treatment system design.	6	CA Primary MCL [A]	0.5	70 [C]
trans-1,2-Dichloroethylene		10	CA Primary MCL [A]	0.5	100 [C]
Dichloromethane (Methylene Chloride)	Evaluate remedial action performance.	5	CA/USEPA Primary MCL [A] [C]	0.5	4 [E]
1,2-Dichloropropane		5	CA/USEPA Primary MCL [A] [C]	0.5	0.5 [E]
2,2-Dichloropropane					
1,1-Dichloropropene					
1,3-Dichloropropene		0.5	CA Primary MCL [A]		
cis-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
trans-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
Ethane					
Ethene					
Ethybenzene		300	CA Primary MCL [A])	0.5	700 [C]; 300 [E]; 29 [H]
Hexachlorobutadiene					
2-Hexanone					
Isopropylbenzene (Cumene)		770	CA DHS State Action Level [F]	0.5	
Methane					
Methyl acetate					
Methyl ethyl ketone		8,400	Other Taste and Odor [H]	5	
Methyl isobutyl ketone (MIBK)		120	CA DHS State Action Level [F]		1300 [H]
Methylcyclohexane					

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Napthalene		170	CA DHS State Action Level [F]		
n-Propylbenzene		260	CA DHS State Action Level [F]		

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [(1)]	California DHS DLR (µg/L) [(2)]	Additional Regulatory Limits (µg/L)
Styrene	Exceedances with respect to federal and state drinking water standards, and state action levels.	100	CA/USEPA Primary MCL [(A) (C)]	0.5	11 [(H)]
1,1,2,2-Tetrachloroethane		1	CA Primary MCL [(A)]	0.1	0.5 [(E)];1.5 [(I)]
Tetrachloroethylene (PCE)		5	CA/USEPA Primary MCL [(A) (C)]	0.5	0.06 [(E)]
Toluene	Evaluate water treatment system design.	150	CA Primary MCL [(A)]/CA PHG [(E)]	0.5	42 [(H)]; 1,000 [(C)]
1,2,3-Trichlorobenzene					
1,2,4-Trichlorobenzene	Evaluate remedial action performance.	5	CA Primary MCL [(A)]/CA PHG [(E)]	0.5	70 [(C)]
1,1,1-Trichloroethane (1,1,1-TCA)		200	CA/USEPA Primary MCL [(A) (C)]	0.5	
1,1,2-Trichloroethane		5	CA/USEPA Primary MCL [(A) (C)]	0.5	5 [(I)]
Trichloroethylene (TCE)		5	CA/USEPA Primary MCL [(A) (C)]	0.5	0.8 [(E)]
Trichlorofluoromethane		150	CA Primary MCL [(A)]	5	700 [(E)]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		1,200	CA Primary MCL [(A)]	10	4,000 [(E)]
1,2,4-Trimethylbenzene		330	CA DHS State Action Level [(F)]		
1,3,5-Trimethylbenzene		330	CA DHS State Action Level [(F)]		
Vinyl chloride		0.5	CA Primary MCL [(A)]	0.5	0.05 [(E)]; 2 [(C)]
Xylene(s)		1,750	CA Primary MCL [(A)]	1,800	17 [(H)]; 10,000 [(C)]
Additional Volatiles					
Methyl tert-butyl ether (MTBE)	Exceedances with respect to federal and state drinking water standards, and state action levels	`13	CA Secondary MCL [(B)]	3	13 [(E)]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Semivolatile Organic Compounds					
Acenaphthene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Acenaphthylene					
Acetophenone					
Aniline (Phenylamine) (Aminobenzene)	Evaluate water treatment system design.				
Anthracene	Evaluate remedial action performance.				
Benzaldehyde					
Benzoic Acid (Carboxybenzene)					
Benzo(a)anthracene					
Benzo(a)pyrene		0.2	CA/USEPA Primary MCL [A,] [C]	0.1	0.004 [E]
Benzo(b)fluoranthene					
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Benzyl Alcohol (Phenylmethanol)					
1,1'-Biphenyl					
Bis(2-chloroethoxy)methane					
Bis(2-chloroethyl)ether					
Bis(2-chloroisopropyl)ether					
4-Bromophenyl-phenyl ether					
Butylbenzyl phthalate (BBP)					
Caprolactam					
Carbazole					
4-Chloro-3-methylphenol					
4-Chloroaniline					

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
2-Chloronaphthalene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
2-Chlorophenol					
4-Chlorophenyl-phenyl ether					
Chrysene	Evaluate water treatment system design.				
Di(2-ethylhexyl)adipate		400	CA/USEPA Primary MCL [A] [C]	5	200 [E]
Di(2-ethylhexyl)phthalate	Evaluate remedial action performance.	4	CA Primary MCL [A]	3	6 [C]; 12 [E]
Dibenz(a,h)anthracene					
Dibenzofuran (Diphenylene oxide)					
3,3'-Dichlorobenzidine					
2,4-Dichlorophenol					
Diethyl phthalate (DEP)					
Dimethyl phthalate					
2,4-Dimethylphenol		100	CA DHS State Action Level [F]		
4,6-Dinitro-2-methylphenol					
2,4-Dinitrophenol					
2,4-Dinitrotoluene					
2,6-Dinitrotoluene					
Di-n-butylphthalate (Dibutyl phthalate)					
Di-n-octylphthalate(Dioctyl phthalate)					
Endothall		100	CA/USEPA Primary MCL [A,] [C]	45	580 [E]
Fluoranthene (Idryl)					
Fluorene					
Glyphosate		700	CA/USEPA Primary MCL [A] [C]	25	1,000 [E]
Hexachlorobenzene		1	CA/USEPA Primary MCL [A] [C]	0.5	0.03 [E]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Hexachlorocyclopentadiene	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	CA/USEPA Primary MCL [A] [C]	1	50 [E]
Hexachloroethane					
Indeno(1,2,3-cd)pyrene					
Isophorone	Evaluate water treatment system design.				
2-Methylnaphthalene					
2-Methylphenol	Evaluate remedial action performance.				
4-Methylphenol					
3,4-Methylphenol					
2-Nitroaniline					
3-Nitroaniline					
2-Nitrophenol					
4-Nitroaniline					
4-Nitrophenol					
Pentachlorophenol		1	CA/USEPA Primary MCL [A] [C]	0.2	0.4 [E]
Phenanthrene					
Phenol		4,200	CA DHS State Action Level [F]		
Pyrene					
Pyridine					
2,4,6-Trichlorophenol					
2,4,5-Trichlorophenol					
Emergent Compounds	Exceedances with respect to federal and state drinking water standards, and state action levels.				
1,4-Dioxane		3	CA DHS State Action Level [F]		15 [I]
N-Nitrosodimethylamine (NDMA)		0.01	CA DHS State Action Level [F]		0.02 [I]
1,2,3-Trichloropropane (1,2,3-TCP)	Evaluate water treatment system design.	0.005	CA DHS State Action Level [F]		

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (2)	Additional Regulatory Limits (µg/L)
Treatment/Discharge Parameters					
Total Organic Parameters	Evaluate groundwater treatment alternatives.				
Total Organic Carbon					
Biological Oxygen Demand	Evaluate treated groundwater discharge alternatives.				
Chemical Oxygen Demand					

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) California Department of Health Services required Detection limit for Purposes of Reporting (DLR).

(3) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Department of Health Services State Action Level for Taste and Odor.

(H) Other Taste and Odor Thresholds.

(I) CA Proposition 65 Regulatory Level for Drinking Water.

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Emergent Compounds					
Chromium (VI)	Exceedances with respect to federal and state drinking water standards, and state action levels.	11 (0.2) [4]	California Toxics Rule for Aquatic Life Protection [H]	1	
Perchlorate		4	CA DHS State Action Level [F]	4 (preliminary)	
	Evaluate water treatment system design.				
TAL Inorganics					
Aluminum	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	USEPA Secondary MCL [D]11	50	200 [B]; 600 [E]
Antimony		6	CA/USEPA Primary MCL [A] [C]	6	20 [E]
Arsenic		10	USEPA Primary MCL [C]	2	50 [A]; 0.004 [E]
Barium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	1,000	CA Primary MCL [A]	100	2,000 [C] [E]
Beryllium		4	CA/USEPA Primary MCL [A] [C]	1	1 [E]
Cadmium		5	CA/USEPA Primary MCL [A] [C]	1	0.07 [E]; 2.6 [3] [H]
Calcium					
Chromium (total)		50	CA Primary MCL [A]	10	100 [C]
Cobalt					
Copper		11 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	170 [E] ; 1300 [F]
Iron		300	CA/USEPA Secondary MCL [B] [D]	100	
Lead		3.1	California Toxics Rule for Aquatic Life Protection [H]	5	15 [F]; 2 [E]; 0.25 [G]
Magnesium					
Manganese		50	CA/USEPA Secondary MCL [B] [D]	20	
Mercury		2	CA/USEPA Primary MCL [A] [C]	1	1.2 [E]
Molybdenum					
Nickel		61	California Toxics Rule for Aquatic Life Protection [H]	10	100 [A];12 [E]
Potassium					
Selenium		5	California Toxics Rule for Aquatic Life Protection [H]	5	50 [A] [C]
Silver	Exceedances with respect	4.7 [2]	California Toxics Rule for Aquatic Life Protection [I]	10	100 [B] [D]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Sodium	to federal and state drinking water standards, and state action levels.				
Thallium		2.0	CA/USEPA Primary MCL [A] [C]	1	0.1 [E]
Vanadium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	50	CA DHS State Action Level [F]	3 (preliminary)	
Zinc		140 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	5,000 [B] [D]
Cyanide		5.2	California Toxics Rule for Aquatic Life Protection [H]	100	200 [C];150 [E]
Additional Inorganics					
Boron	Evaluate groundwater treatment alternatives and treated groundwater discharge options	1,000	CA DHS State Action Level [F]		
Silicon					
Treatment/Discharge Parameters					
pH	Evaluate groundwater treatment alternatives and treated groundwater discharge options	6.5 to 8.5	USEPA Secondary MCL [D]		
Alkalinity					
Ammonia		500	Other Tastes and Odors [J]		
Bicarbonate	Exceedances with respect to federal and state drinking water standards, and state action levels				
Bromide					
Chloride		250,000	CA/USEPA Secondary MCL [B,D]		
Fluoride		1,000	CA PHG [E]	100	2,000 [A] [D]
Nitrate (as N)		10,000	USEPA Primary MCL [C]		10,000 [E]
Nitrite (as N)		1,000	CA/USEPA Primary MCL [A] [C]	400	1,000 [E]
Phosphorus (orthophosphate, total phosphorus)					
Sulfate		250,000	CA Secondary MCL [B]	500	250,000 [D]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (3)	Additional ARARs (µg/L)
Total dissolved solids (TDS)	Evaluate groundwater treatment alternatives and treated groundwater discharge options Exceedances with respect to federal and state drinking water standards, and state action levels	250,000	CA/USEPA Secondary MCL (B,D)		

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(3) California Department of Health Services required Detection Limit for Purposes of Reporting (DLR).

(4) 0.2 µg/L detection level is needed for comparability to other databases in the region per previous DHS limit.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Proposition 65 Regulatory Level for Drinking Water.

(H) California Toxics Rule for Freshwater Aquatic Life Protection - Continuous (4-day average) Concentration.

(I) California Toxics Rule for Freshwater Aquatic Life Protection - Maximum (1-hr average) Concentration.

(J) Other Taste and Odor Thresholds.

Task Order 009

ESAT 68-W0-1028
(68-W-01-028)

00901044

Author: Richard Bauer/R9/USEPA/US **Date:** 02/28/2005 09:57 AM

TECHNICAL DIRECTION FORM # 00901044

SITE ACCOUNT NO: 09 BC LA 02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: 009 **DATE:** 2/28/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	1,4-dioxane
R05S37	water	up to 30

Instructions: Analyze up to 30 water samples for 1,4-dioxane following R9 Lab SOP 315.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report each SDG	30 days from receipt of last sample in

Comments:

Sampling Dates: 02/28/05--03/04/05

Omega Chemical Superfund Site OU-2 Remedial Investigation/Feasibility Study

ANALYSES

ANALYSES:

# of Samples	Matrix	Analytes	Method	TAT	Lab		
22	W	VOCs + MTBE	OCL03.221		CLP		
~~20~~	~~W~~	~~SVOCs~~	~~OLC03.221~~		~~CLP~~		
~~20~~	~~W~~	~~TAL metals + B,SiO2 CLP flex~~			~~21~~	~~CLP~~	
20	W	1,4 dioxane	SOP 315		35	R9L	
~~20~~	~~W~~	~~Cyanide~~	~~CILM~~		~~21~~	~~CLP~~	
~~20~~	~~W~~	~~ClO4~~		~~EPA 314~~	~~35~~	~~R9L~~	
~~20~~	~~W~~	~~Anions (full list~~		~~EPA 300~~	~~35~~	~~R9L~~	
~~20~~	~~W~~	~~TKN~~		~~EPA 351.2~~	~~35~~	~~R9 L~~	
~~20~~	~~W~~	~~Ammonia~~		~~EPA 350.2~~	~~35~~	~~R9 L~~	
~~20~~	~~W~~	~~Total Phosphorus~~	~~EPA 365.4~~		~~35~~	~~R9L~~	
~~20~~	~~W~~	~~TDS~~		~~EPA 160~~	~~35~~	~~R9L~~	
~~20~~	~~W~~	~~Alkalinity~~	~~SM 2320B~~		~~35~~	~~R9L~~	
~~20~~	~~W~~	~~TOC~~		~~EPA 415.1~~	~~35~~	~~R9L~~	
~~20~~	~~W~~	~~BOD~~		~~SM 5210B~~	~~35~~	~~R9 L~~	
20	W	hex. chrome		218.6	USACE		
~~20~~	~~W~~	~~COD~~		~~SM5520D~~	~~USACE~~		

Lab Assignment Case Number

R9 Lab Case # R05S37

CLP Case # 33916

Lab Assignments Forwarded

20	W	NDMA	1625	USACE
22	W	1,2,3-TCP		USACE

Data Distribution:

EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

tperina@ch2m.com, djablon1@ch2m.com

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form, Sections 6- 7.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level	Company	Due Date
N/A				

Turn Around Times:

Supplemental Data Validation Information :

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Contractor PO: Tom Perina Phone: 951-276-3003, Ext. 24
Sampler: Dan Jablonsky
Company: CH@M Hill
Office Phone Number: 951-276-3003
Mobile Phone Number: 714-227-3324
Email: djablon1@ch2m.com
Office Address: CH@M Hill
3550 Vine St., Suite 320
Riverside, CA 92507

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-2 RSCC Form Feb 2005 V2.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

QC Sum Form Dec 2004.xls

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
SUPERFUND ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study		
Site Name: Omega Chemical OU-2	**SS ID:** BC	**OU:** 2
[X] **RI/FS/RA [ ] Enforcement [ ] PA/SI [ ] Emergency Response [ ] Fed. Facilities**		
Proposed Sampling Dates: February 28 to March 3, 2005		
EPA Project Manager: Christopher Lichens	**Mail Code:** SFD-7-4	

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 3550 Vine Street, Suite 320 Riverside, CA 92507	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 951.276.3003 ext. 24	**Office Fax:** 714.424.2204
Sampler: Dan Jablonski **(if different from above):**	**E-mail:** djablon1@ch2m.com
Office Phone: 714.435.6215	**Mobile Phone:** 949.307.4364

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004).
EPA Quality Assurance Office DCN (if available):

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Christopher Lichens/ EPA (Lichens.Christopher@epamail.epa.gov)
Electronic report copy	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)
Electronic Data Deliverable (EDD) for R9 Lab Results*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[h]	Matrix	Number of Samples
Volatile Organic Compounds				
TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)	Water	22
TCL[a] Semivolatile Organic Compounds (SVOCs)	CLP [b]	(c)	Water	20
Emergent Compounds				
1,2,3-TCP	(i)	0.005 µg/L	Water	22
1,4-Dioxane	EPA 8270 [b]	1 µg/L	Water	20
NDMA	Modified EPA Method 1625 [b]	0.02 µg/L	Water	20
Perchlorate	EPA 314 [b ,d,]	5 µg/L	Water	20
Hexavalent Chromium	EPA 218.6 [b, d]	0.2 µg/L	Water	20
Groundwater Treatment and Discharge Parameters				
TAL [a] Metals (field-filtered) plus Boron, Silicon	EPA 200.7[d,b] EPA 200.8[d,b] EPA 245.1/CLP	(g)	Water	20
Cyanide	EPA 335.4[d,b]	10 mg/L	Water	20
Bromide	EPA 300.0[d,b]	1.0 mg/L	Water	20
Chloride	EPA 300.0[d,b]	1.0 mg/L	Water	20
Fluoride	EPA 300.0[d,b]	0.1 mg/L	Water	20
Nitrate-N	EPA 300.0[d,b]	0.1 mg/L	Water	20
Nitrite-N	EPA 300.0[d,b]	0.1 mg/L	Water	20
Orthophosphate-P	EPA 300.0[d,b]	1.0 mg/L	Water	20
Total Sulfate	EPA 300.0[d,b]	1.0 mg/L	Water	20
Total Kjeldahl Nitrogen (TKN)	EPA 351.2[d,b]	0.3 mg/L	Water	20
Ammonia	EPA 350.2[d,b]	0.3 mg/L	Water	20
Total Phosphorus	EPA 365.4[d,b]	0.3 mg/L	Water	20
Total Dissolved Solids (TDS)	EPA 160.1[d,b]	20 mg/L	Water	20
Alkalinity	SM 2320B [b, e]	20 mg/L	Water	20
Total Organic Carbon	EPA 415.1[d]	2.0 mg/L	Water	20

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[h]	Matrix	Number of Samples
BOD	SM 5210B[e]	3 mg/L	Water	20
COD	SM5220D[e]	5.0 mg/L	Water	20

[a] Target Compound List (TCL) and Target Analyte List (TAL) as shown in Table 2 and Table 3 and Appendix B of the QAPP (CH2M HILL, 2004). MTBE: methyl tert-butyl ether.
[b] Volatile organics, semivolatile organics, metals and cyanide may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. For other analytes, the analyses will be carried out by EPA Regional Laboratory or a Contract Laboratory. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP.
[c] For volatile organics, detection limits will be at 1 part per billion (ppb) for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B of the QAPP.
[d] U.S. Environmental Protection Agency, 1979. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, revised March 1983; U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste*, SW846.
[e] *Standard Methods for the Examination of Water and Wastewater*, 17th Edition (1989).
[f] State of California Department of Health Services (DHS) Method Determination of Perchlorate by Ion Chromatography, as detailed in EPA Region IX SOP in Appendix B of the QAPP.
[g] Detection limits provided in Appendix B of the QAPP along with methods for the specific metals. Silicon to be determined as silica by EPA 200.7 and will have a detection level < 0.1 part per million (ppm).
[h] Target detection level is reporting level, see text for explanation.

i The method and QA/QC will follow California State guidance to achieve the needed low regulatory limit. Laboratory-specific standard operating procedures will be defined prior to start of work, and subsequent to selection of laboratory.

Notes:
1) Above sample numbers include 1 lab QC, 2 field duplicates, and 2 ambient blanks.
2) Trip blanks will not be included in this sampling round.
3) See below (6) for expanded analyte list

b) See section 6 for analyte list and needed detection levels

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

See attached Table 2 and Table 3.

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Volatile Organic Compounds					
Acetone	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Benzene		1	CA Primary MCL [A]	0.5	0.15 [E]
Bromodichloromethane		100	USEPA Primary MCL [C]	0.5	2.5 [I] ; 100-proposed [A]
Bromoform	Evaluate water treatment system design.	100	USEPA Primary MCL [C]	0.5	45 [I] ; 100-proposed [A]
Bromomethane		500	CA Proposition 65 Regulatory Level [I]	0.5	
n-Butylbenzene	Evaluate remedial action performance.	260	CA DHS State Action Level [F]		
sec-Butylbenzene		260	CA DHS State Action Level [F]		
Carbon disulfide		160	CA DHS State Action Level [F]		
Carbon tetrachloride		0.5	CA Primary MCL [A]	0.5	0.1 [E]
Chlorobenzene		100	USEPA Primary MCL [C]		50 [H]
Chloroethane		16	Other Taste and Odor [H]	0.5	100 [I]
Chloroform					
Chloromethane			No Applicable ARAR		
2-Chlorotoluene		140	CA DHS State Action Level [F]		
4-Chlorotoluene		140	CA DHS State Action Level [F]		
Cyclohexane					
Dibromomethane					
Dibromochloromethane					
Dibromochloropropane (DBCP)		0.2	USEPA Primary MCL [C]		0.05 [I]
1,2-Dibromoethane		0.05			0.1 [I]
1,2-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [E]
1,3-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [F]
1,4-Dichlorobenzene		5	CA Primary MCL [A]	0.5	6 [E]
Dichlorodifluoromethane		1,000	CA DHS State Action Level [F]		

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
1,1-Dichloroethane	Exceedances with respect to federal and state drinking water standards, and state action levels.	5	CA Primary MCL [A]	0.5	3 [E]
1,2-Dichloroethane		0.5	CA Primary MCL [A]	0.5	0.4 [E]
1,1-Dichloroethylene		6	CA Primary MCL [A]	0.5	7 [C]; 10 [E]
cis-1,2-Dichloroethylene	Evaluate water treatment system design.	6	CA Primary MCL [A]	0.5	70 [C]
trans-1,2-Dichloroethylene		10	CA Primary MCL [A]	0.5	100 [C]
Dichloromethane (Methylene Chloride)	Evaluate remedial action performance.	5	CA/USEPA Primary MCL [A] [C]	0.5	4 [E]
1,2-Dichloropropane		5	CA/USEPA Primary MCL [A] [C]	0.5	0.5 [E]
2,2-Dichloropropane					
1,1-Dichloropropene					
1,3-Dichloropropene		0.5	CA Primary MCL [A]		
cis-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
trans-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
Ethane					
Ethene					
Ethybenzene		300	CA Primary MCL [A])	0.5	700 [C]; 300 [E]; 29 [H]
Hexachlorobutadiene					
2-Hexanone					
Isopropylbenzene (Cumene)		770	CA DHS State Action Level [F]	0.5	
Methane					
Methyl acetate					
Methyl ethyl ketone		8,400	Other Taste and Odor [H]	5	
Methyl isobutyl ketone (MIBK)		120	CA DHS State Action Level [F]		1300 [H]
Methylcyclohexane					
Napthalene		170	CA DHS State Action Level [F]		
n-Propylbenzene		260	CA DHS State Action Level [F]		

TABLE 2

Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Styrene	Exceedances with respect to federal and state drinking water standards, and state action levels.	100	CA/USEPA Primary MCL [A] [C]	0.5	11 [H]
1,1,2,2-Tetrachloroethane		1	CA Primary MCL [A]	0.1	0.5 [E];1.5 [I]
Tetrachloroethylene (PCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.06 [E]
Toluene	Evaluate water treatment system design.	150	CA Primary MCL [A]/CA PHG [E]	0.5	42 [H]; 1,000 [C]
1,2,3-Trichlorobenzene	Evaluate remedial action performance.				
1,2,4-Trichlorobenzene		5	CA Primary MCL [A]/CA PHG [E]	0.5	70 [C]
1,1,1-Trichloroethane (1,1,1-TCA)		200	CA/USEPA Primary MCL [A] [C]	0.5	
1,1,2-Trichloroethane		5	CA/USEPA Primary MCL [A] [C]	0.5	5 [I]
Trichloroethylene (TCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.8 [E]
Trichlorofluoromethane		150	CA Primary MCL [A]	5	700 [E]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		1,200	CA Primary MCL [A]	10	4,000 [E]
1,2,4-Trimethylbenzene		330	CA DHS State Action Level [F]		
1,3,5-Trimethylbenzene		330	CA DHS State Action Level [F]		
Vinyl chloride		0.5	CA Primary MCL [A]	0.5	0.05 [E]; 2 [C]
Xylene(s)		1,750	CA Primary MCL [A]	1,800	17 [H]; 10,000 [C]
Additional Volatiles					
Methyl tert-butyl ether (MTBE)	Exceedances with respect to federal and state drinking water standards, and state action levels	`13	CA Secondary MCL [B]	3	13 [E]

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Semivolatile Organic Compounds					
Acenaphthene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Acenaphthylene					
Acetophenone					
Aniline (Phenylamine) (Aminobenzene)	Evaluate water treatment system design.				
Anthracene	Evaluate remedial action performance.				
Benzaldehyde					
Benzoic Acid (Carboxybenzene)					
Benzo(a)anthracene					
Benzo(a)pyrene		0.2	CA/USEPA Primary MCL [A,) (C]	0.1	0.004 [E]
Benzo(b)fluoranthene					
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Benzyl Alcohol (Phenylmethanol)					
1,1'-Biphenyl					
Bis(2-chloroethoxy)methane					
Bis(2-chloroethyl)ether					
Bis(2-chloroisopropyl)ether					
4-Bromophenyl-phenyl ether					
Butylbenzyl phthalate (BBP)					
Caprolactam					
Carbazole					
4-Chloro-3-methylphenol					
4-Chloroaniline					

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
2-Chloronaphthalene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
2-Chlorophenol					
4-Chlorophenyl-phenyl ether					
Chrysene	Evaluate water treatment system design.				
Di(2-ethylhexyl)adipate		400	CA/USEPA Primary MCL [A] [C]	5	200 [E]
Di(2-ethylhexyl)phthalate	Evaluate remedial action performance.	4	CA Primary MCL [A]	3	6 [C]; 12 [E]
Dibenz(a,h)anthracene					
Dibenzofuran (Diphenylene oxide)					
3,3'-Dichlorobenzidine					
2,4-Dichlorophenol					
Diethyl phthalate (DEP)					
Dimethyl phthalate					
2,4-Dimethylphenol		100	CA DHS State Action Level [F]		
4,6-Dinitro-2-methylphenol					
2,4-Dinitrophenol					
2,4-Dinitrotoluene					
2,6-Dinitrotoluene					
Di-n-butylphthalate (Dibutyl phthalate)					
Di-n-octylphthalate(Dioctyl phthalate)					
Endothall		100	CA/USEPA Primary MCL [A,] [C]	45	580 [E]
Fluoranthene (Idryl)					
Fluorene					
Glyphosate		700	CA/USEPA Primary MCL [A] [C]	25	1,000 [E]
Hexachlorobenzene		1	CA/USEPA Primary MCL [A] [C]	0.5	0.03 [E]

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Hexachlorocyclopentadiene	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	CA/USEPA Primary MCL [A] [C]	1	50 [E]
Hexachloroethane					
Indeno(1,2,3-cd)pyrene					
Isophorone	Evaluate water treatment system design.				
2-Methylnaphthalene					
2-Methylphenol	Evaluate remedial action performance.				
4-Methylphenol					
3,4-Methylphenol					
2-Nitroaniline					
3-Nitroaniline					
2-Nitrophenol					
4-Nitroaniline					
4-Nitrophenol					
Pentachlorophenol		1	CA/USEPA Primary MCL [A] [C]	0.2	0.4 [E]
Phenanthrene					
Phenol		4,200	CA DHS State Action Level [F]		
Pyrene					
Pyridine					
2,4,6-Trichlorophenol					
2,4,5-Trichlorophenol					
Emergent Compounds	Exceedances with respect to federal and state drinking water standards, and state action levels.				
1,4-Dioxane		3	CA DHS State Action Level [F]		15 [I]
N-Nitrosodimethylamine (NDMA)		0.01	CA DHS State Action Level [F]		0.02 [I]
1,2,3-Trichloropropane (1,2,3-TCP)	Evaluate water treatment system design.	0.005	CA DHS State Action Level [F]		

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (2)	Additional Regulatory Limits (µg/L)
Treatment/Discharge Parameters					
Total Organic Parameters	Evaluate groundwater treatment alternatives.				
Total Organic Carbon					
Biological Oxygen Demand	Evaluate treated groundwater discharge alternatives.				
Chemical Oxygen Demand					

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) California Department of Health Services required Detection limit for Purposes of Reporting (DLR).

(3) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Department of Health Services State Action Level for Taste and Odor.

(H) Other Taste and Odor Thresholds.

(I) CA Proposition 65 Regulatory Level for Drinking Water.

TABLE 3
Expanded Analyte List for Inorganic Parameters and Emergent Compounds – Omega Chemical OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Emergent Compounds					
Chromium (VI)	Exceedances with respect to federal and state drinking water standards, and state action levels.	11 (0.2) [4]	California Toxics Rule for Aquatic Life Protection [H]	1	
Perchlorate		4	CA DHS State Action Level [F]	4 (preliminary)	
	Evaluate water treatment system design.				
TAL Inorganics					
Aluminum	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	USEPA Secondary MCL [D]11	50	200 [B]; 600 [E]
Antimony		6	CA/USEPA Primary MCL [A] [C]	6	20 [E]
Arsenic		10	USEPA Primary MCL [C]	2	50 [A]; 0.004 [E]
Barium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	1,000	CA Primary MCL [A]	100	2,000 [C] [E]
Beryllium		4	CA/USEPA Primary MCL [A] [C]	1	1 [E]
Cadmium		5	CA/USEPA Primary MCL [A] [C]	1	0.07 [E]; 2.6 [3] [H]
Calcium					
Chromium (total)		50	CA Primary MCL [A]	10	100 [C]
Cobalt					
Copper		11 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	170 [E]; 1300 [F]
Iron		300	CA/USEPA Secondary MCL [B] [D]	100	
Lead		3.1	California Toxics Rule for Aquatic Life Protection [H]	5	15 [F]; 2 [E]; 0.25 [G]
Magnesium					
Manganese		50	CA/USEPA Secondary MCL [B] [D]	20	
Mercury		2	CA/USEPA Primary MCL [A] [C]	1	1.2 [E]
Molybdenum					
Nickel		61	California Toxics Rule for Aquatic Life Protection [H]	10	100 [A];12 [E]
Potassium					
Selenium		5	California Toxics Rule for Aquatic Life Protection [H]	5	50 [A] [C]
Silver	Exceedances with respect	4.7 [2]	California Toxics Rule for Aquatic Life Protection [I]	10	100 [B] [D]

TABLE 3
Expanded Analyte List for Inorganic Parameters and Emergent Compounds – Omega Chemical OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Sodium	to federal and state drinking water standards, and state action levels.				
Thallium		2.0	CA/USEPA Primary MCL [A] [C]	1	0.1 [E]
Vanadium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	50	CA DHS State Action Level [F]	3 (preliminary)	
Zinc		140 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	5,000 [B] [D]
Cyanide		5.2	California Toxics Rule for Aquatic Life Protection [H]	100	200 [C];150 [E]
Additional Inorganics					
Boron	Evaluate groundwater treatment alternatives and treated groundwater discharge options	1,000	CA DHS State Action Level [F]		
Silicon					
Treatment/Discharge Parameters					
pH	Evaluate groundwater treatment alternatives and treated groundwater discharge options	6.5 to 8.5	USEPA Secondary MCL [D]		
Alkalinity					
Ammonia		500	Other Tastes and Odors [J]		
Bicarbonate	Exceedances with respect to federal and state drinking water standards, and state action levels				
Bromide					
Chloride		250,000	CA/USEPA Secondary MCL [B,D]		
Fluoride		1,000	CA PHG [E]	100	2,000 [A] [D]
Nitrate (as N)		10,000	USEPA Primary MCL [C]		10,000 [E]
Nitrite (as N)		1,000	CA/USEPA Primary MCL [A] [C]	400	1,000 [E]
Phosphorus (orthophosphate, total phosphorus)					
Sulfate		250,000	CA Secondary MCL [B]	500	250,000 [D]

TABLE 3
Expanded Analyte List for Inorganic Parameters and Emergent Compounds – Omega Chemical OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Total dissolved solids (TDS)	Evaluate groundwater treatment alternatives and treated groundwater discharge options Exceedances with respect to federal and state drinking water standards, and state action levels	250,000	CA/USEPA Secondary MCL [B,D]		

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(3) California Department of Health Services required Detection Limit for Purposes of Reporting (DLR).

(4) 0.2 µg/L detection level is needed for comparability to other databases in the region per previous DHS limit.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Proposition 65 Regulatory Level for Drinking Water.

(H) California Toxics Rule for Freshwater Aquatic Life Protection - Continuous (4-day average) Concentration.

(I) California Toxics Rule for Freshwater Aquatic Life Protection - Maximum (1-hr average) Concentration.

(J) Other Taste and Odor Thresholds.

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	12/13/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	33625
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	714.435.6215		

Mattrix:	X	Groundwater	Surface Soil	Air
(check one)		Surface Water	Subsurface Soil	Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y1LL1	Equip / **Field** / Travel	11/30/2004
Y1LL7	**Equip** / Field / Travel	12/1/2004
Y1LM9	Equip / **Field** / Travel	12/6/2004
Y1LP4	Equip / **Field** / Travel	12/9/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y1LL2	11/30/2004
Y1LN4	12/7/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y1LM0	Y1LL9	12/2/2004	a / b / c / d
Y1LM7	Y1LM6	12/2/2004	a / b / c / d
Y1LN6	Y1LN5	12/7/2004	a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
X	Less Than Required Sample Volume	Y1LM3 / Dec 8, 2004 / Slow recovery rate of well
X	Low Flow/Recharge Rates	Only requested analyis for VOCs, 1,4-Dioxiane, and Cr+6
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

00901061

Author: Richard Bauer/R9/USEPA/US **Date:** 06/06/2005 07:51 AM

TECHNICAL DIRECTION FORM # 00901061

SITE ACCOUNT NO: 09 BC LA 02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: 009 **DATE:** 6/6/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	VOCs by 524.2
R05S54	water	up to 20

Instructions: Analyze up to 20 water samples for VOCs following R9 Lab SOP 354.

Deliverables	**Due Dates**
[x] Complete Data Package	14 days from receipt of each sample
[x] Analytical Report	14 days from receipt of each sample

Comments:

Omega Chemical Superfund Site OU-2 Remedial Inve

Sampling Dates: 06/06/05 - end of summer

ANALYSES

ANALYSES:

# of Samples	Matrix	Analytes	Method	TAT	Lab
10	AQ	VOC	524.2	14days	R9

Data Distribution:

EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

tperina@ch2m.com, djablon1@ch2m.com

Supplemental Information

As per Tom Perina, CH2M-Hill, methane, ethane, ethene are not required for these samples, despite being on the analyte list on the request for analysis.

Lab Assignment Number **Case**

R9 Lab Case # R05S54

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Turn Around Times:

Supplemental Data Validation Information :

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.:

Contractor PO:	Tom Perina	Phone: 951-276-3003, Ext. 24	
Sampler:	Dan Jablonski		
Company:	CH@M Hill		
Office Phone Number:	951-276-3003		
Mobile Phone Number:	714-227-3324		
Email:	djablon1@ch2m.com	714.435.6215 (office)	949.307.4364 (cell)
Office Address:	CH@M Hill 3550 Vine St., Suite 320 Riverside, CA 92507		

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-2 RSCC Form June 2005.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
SUPERFUND ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study		
Site Name: Omega Chemical OU-2	**SS ID:** BC	**OU:** 2
[X] **RI/FS/RA [ ] Enforcement [ ] PA/SI [ ] Emergency Response [ ] Fed. Facilities**		
Proposed Sampling Dates: June 6, 2005 for first sampling event. It is anticipated that 4 additional events will occur during summer 2005. Each sampling event will include the collecting of one or two samples for VOCs.		
EPA Project Manager: Christopher Lichens	**Mail Code:** SFD-7-4	

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 3550 Vine Street, Suite 320 Riverside, CA 92507	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 951.276.3003 ext. 24	**Office Fax:** 714.424.2204
Sampler: Dan Jablonski **(if different from above):**	**E-mail:** djablon1@ch2m.com
Office Phone: 714.435.6215	**Mobile Phone:** 949.307.4364

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004).
EPA Quality Assurance Office DCN (if available):

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Christopher Lichens/ EPA (Lichens.Christopher@epamail.epa.gov)
Electronic report copy	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)

Electronic Data Deliverable (EDD) for R9 Lab Results*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[d]	Matrix	Number of Samples
Volatile Organic Compounds				
TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)	Water	2 samples per event = 10 samples total

[a] Target Compound List (TCL) and Target Analyte List (TAL) as shown in Table 2 and Appendix B of the QAPP (CH2M HILL, 2004). MTBE: methyl tert-butyl ether.
[b] Volatile organics may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP.
[c] For volatile organics, detection limits will be at 1 part per billion (ppb) for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B of the QAPP.
[d] Target detection level is reporting level, see text for explanation.

b) See section 6 for analyte list and needed detection levels

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

See attached Table 2.

TABLE 2
Expanded Analyte List for Organic Parameters – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Volatile Organic Compounds					
Acetone	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Benzene		1	CA Primary MCL [A]	0.5	0.15 [E]
Bromodichloromethane		100	USEPA Primary MCL [C]	0.5	2.5 [I] ; 100-proposed [A]
Bromoform	Evaluate water treatment system design.	100	USEPA Primary MCL [C]	0.5	45 [I] ; 100-proposed [A]
Bromomethane		500	CA Proposition 65 Regulatory Level [I]	0.5	
n-Butylbenzene	Evaluate remedial action performance.	260	CA DHS State Action Level [F]		
sec-Butylbenzene		260	CA DHS State Action Level [F]		
Carbon disulfide		160	CA DHS State Action Level [F]		
Carbon tetrachloride		0.5	CA Primary MCL [A]	0.5	0.1 [E]
Chlorobenzene		100	USEPA Primary MCL [C]		50 [H]
Chloroethane		16	Other Taste and Odor [H]	0.5	100 [I]
Chloroform					
Chloromethane			No Applicable ARAR		
2-Chlorotoluene		140	CA DHS State Action Level [F]		
4-Chlorotoluene		140	CA DHS State Action Level [F]		
Cyclohexane					
Dibromomethane					
Dibromochloromethane					
Dibromochloropropane (DBCP)		0.2	USEPA Primary MCL [C]		0.05 [I]
1,2-Dibromoethane		0.05			0.1 [I]
1,2-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [E]
1,3-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [F]
1,4-Dichlorobenzene		5	CA Primary MCL [A]	0.5	6 [E]
Dichlorodifluoromethane		1,000	CA DHS State Action Level [F]		

TABLE 2
Expanded Analyte List for Organic Parameters – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
1,1-Dichloroethane	Exceedances with respect to federal and state drinking water standards, and state action levels.	5	CA Primary MCL [A]	0.5	3 [E]
1,2-Dichloroethane		0.5	CA Primary MCL [A]	0.5	0.4 [E]
1,1-Dichloroethylene		6	CA Primary MCL [A]	0.5	7 [C]; 10 [E]
cis-1,2-Dichloroethylene	Evaluate water treatment system design.	6	CA Primary MCL [A]	0.5	70 [C]
trans-1,2-Dichloroethylene		10	CA Primary MCL [A]	0.5	100 [C]
Dichloromethane (Methylene Chloride)	Evaluate remedial action performance.	5	CA/USEPA Primary MCL [A] [C]	0.5	4 [E]
1,2-Dichloropropane		5	CA/USEPA Primary MCL [A] [C]	0.5	0.5 [E]
2,2-Dichloropropane					
1,1-Dichloropropene					
1,3-Dichloropropene		0.5	CA Primary MCL [A]		
cis-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
trans-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
Ethane					
Ethene					
Ethybenzene		300	CA Primary MCL [A])	0.5	700 [C]; 300 [E]; 29 [H]
Hexachlorobutadiene					
2-Hexanone					
Isopropylbenzene (Cumene)		770	CA DHS State Action Level [F]	0.5	
Methane					
Methyl acetate					
Methyl ethyl ketone		8,400	Other Taste and Odor [H]	5	
Methyl isobutyl ketone (MIBK)		120	CA DHS State Action Level [F]		1300 [H]
Methylcyclohexane					
Napthalene		170	CA DHS State Action Level [F]		
n-Propylbenzene		260	CA DHS State Action Level [F]		

TABLE 2

Expanded Analyte List for Organic Parameters – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Styrene	Exceedances with respect to federal and state drinking water standards, and state action levels.	100	CA/USEPA Primary MCL [A] [C]	0.5	11 [H]
1,1,2,2-Tetrachloroethane		1	CA Primary MCL [A]	0.1	0.5 [E];1.5 [I]
Tetrachloroethylene (PCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.06 [E]
Toluene	Evaluate water treatment system design.	150	CA Primary MCL [A]/CA PHG [E]	0.5	42 [H]; 1,000 [C]
1,2,3-Trichlorobenzene	Evaluate remedial action performance.				
1,2,4-Trichlorobenzene		5	CA Primary MCL [A]/CA PHG [E]	0.5	70 [C]
1,1,1-Trichloroethane (1,1,1-TCA)		200	CA/USEPA Primary MCL [A] [C]	0.5	
1,1,2-Trichloroethane		5	CA/USEPA Primary MCL [A] [C]	0.5	5 [I]
Trichloroethylene (TCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.8 [E]
Trichlorofluoromethane		150	CA Primary MCL [A]	5	700 [E]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		1,200	CA Primary MCL [A]	10	4,000 [E]
1,2,4-Trimethylbenzene		330	CA DHS State Action Level [F]		
1,3,5-Trimethylbenzene		330	CA DHS State Action Level [F]		
Vinyl chloride		0.5	CA Primary MCL [A]	0.5	0.05 [E]; 2 [C]
Xylene(s)		1,750	CA Primary MCL [A]	1,800	17 [H]; 10,000 [C]

TABLE 2
Expanded Analyte List for Organic Parameters – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (2)	Additional Regulatory Limits (µg/L)
Additional Volatiles					
Methyl tert-butyl ether (MTBE)	Exceedances with respect to federal and state drinking water standards, and state action levels	13	CA Secondary MCL (B)	3	13 (E)

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) California Department of Health Services required Detection limit for Purposes of Reporting (DLR).

(3) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Department of Health Services State Action Level for Taste and Odor.

(H) Other Taste and Odor Thresholds.

(I) CA Proposition 65 Regulatory Level for Drinking Water.

00901085

Author: Richard Bauer/R9/USEPA/US **Date:** 08/30/2005 07:47 AM

TECHNICAL DIRECTION FORM # 00901085

SITE ACCOUNT NO: 09 BC LA 02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: 009 **DATE:** 8/30/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate, 1,4-dioxane
R05S77	water	up to 30

Instructions: Analyze up to 30 water samples for perchlorate and 1,4-dioxane following R9 Lab SOPs 531 and 315.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of each sample
[x] Analytical Report	30 days from receipt of each sample

Comments:

Omega Chemical Superfund Site OU-2 Remedial Investigation/Feasibility Study

Sampling Dates: 08/29/05--09/02/05:

ANALYSES

ANALYSES:

Samples	Matrix	Analytes	Method	Lab
22	W	VOCs + MTBE	OCL03.2CLP	
20	W	1,4 dioxane	8270	R9L
20	W	hex. chrome	218.6	USACE
20	W	NDMA	1625	USACE
22	W	1,2,3-TCP		USACE
20	W	Perchlorate	314	R9L

Lab Assignment Case Number

R9 Lab Case # R05S77

CLP Case # 34569

Lab Assignments Forwarded

Data Distribution:

EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

tperina@ch2m.com, djablon1@ch2m.com

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form, Sections 6- 7.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
N/A		

Company **Due Date**

Turn Around Times:

Supplemental Data Validation Information :	Validation Received Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Contractor PO: Tom Perina Phone: 951-276-3003, Ext. 24
Sampler: Dan Jablonski
Company: CH@M Hill
Office Phone Number: 951-276-3003
Mobile Phone Number: 714-227-3324
Email: djablon1@ch2m.com 714.435.6215 (office) 949.307.4364 (cell)
Office Address: CH@M Hill
3550 Vine St., Suite 320
Riverside, CA 92507

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-2 RSCC Form Sept 2005 V2.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

QC Sum Form March 2005.xls jablonski 3/7

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
SUPERFUND ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study		
Site Name: Omega Chemical OU-2	**SS ID:** BC	**OU:** 2
[X] **RI/FS/RA [ ] Enforcement [ ] PA/SI [ ] Emergency Response [ ] Fed. Facilities**		
Proposed Sampling Dates: August 29 to September 2, 2005		
EPA Project Manager: Christopher Lichens	**Mail Code:** SFD-7-4	

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 3550 Vine Street, Suite 320 Riverside, CA 92507	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 951.276.3003 ext. 24	**Office Fax:** 714.424.2204
Sampler: Dan Jablonski **(if different from above):**	**E-mail:** djablon1@ch2m.com
Office Phone: 714.435.6215	**Mobile Phone:** 949.307.4364

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004).
EPA Quality Assurance Office DCN (if available):

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Christopher Lichens/ EPA (Lichens.Christopher@epamail.epa.gov)
Electronic report copy	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)
Electronic Data Deliverable (EDD) for R9 Lab Results*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[e]	Matrix	Number of Samples
Volatile Organic Compounds				
TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)	Water	22
Emergent Compounds				
1,2,3-TCP	(f)	0.005 µg/L	Water	22
1,4-Dioxane	EPA 8270 [b]	1 µg/L	Water	20
NDMA	Modified EPA Method 1625 [b]	0.02 µg/L	Water	20
Perchlorate	EPA 314 [b ,d,]	5 µg/L	Water	20
Hexavalent Chromium	EPA 218.6 [b, d]	0.2 µg/L	Water	20

[a] Target Compound List (TCL) and Target Analyte List (TAL) as shown in Table 2 and Table 3 and Appendix B of the QAPP (CH2M HILL, 2004). MTBE: methyl tert-butyl ether.
[b] Volatile organics and emergent compounds may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP.
[c] For volatile organics, detection limits will be at 1 part per billion (ppb) for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B of the QAPP.
[d] U.S. Environmental Protection Agency, 1979. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, revised March 1983; U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste*, SW846.
[e] Target detection level is reporting level, see text for explanation.
[f] The method and QA/QC will follow California State guidance to achieve the needed low regulatory limit. Laboratory-specific standard operating procedures will be defined prior to start of work, and subsequent to selection of laboratory.

Notes:
1) Above sample numbers include 1 lab QC, 2 field duplicates, and 2 ambient blanks.
2) Trip blanks will not be included in this sampling round.
3) See below (6) for expanded analyte list

b) See section 6 for analyte list and needed detection levels

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

See attached Table 2 and Table 3.

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Volatile Organic Compounds					
Acetone	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Benzene		1	CA Primary MCL [A]	0.5	0.15 [E]
Bromodichloromethane		100	USEPA Primary MCL [C]	0.5	2.5 [I] ; 100-proposed [A]
Bromoform	Evaluate water treatment system design.	100	USEPA Primary MCL [C]	0.5	45 [I] ; 100-proposed [A]
Bromomethane		500	CA Proposition 65 Regulatory Level [I]	0.5	
n-Butylbenzene	Evaluate remedial action performance.	260	CA DHS State Action Level [F]		
sec-Butylbenzene		260	CA DHS State Action Level [F]		
Carbon disulfide		160	CA DHS State Action Level [F]		
Carbon tetrachloride		0.5	CA Primary MCL [A]	0.5	0.1 [E]
Chlorobenzene		100	USEPA Primary MCL [C]		50 [H]
Chloroethane		16	Other Taste and Odor [H]	0.5	100 [I]
Chloroform					
Chloromethane			No Applicable ARAR		
2-Chlorotoluene		140	CA DHS State Action Level [F]		
4-Chlorotoluene		140	CA DHS State Action Level [F]		
Cyclohexane					
Dibromomethane					
Dibromochloromethane					
Dibromochloropropane (DBCP)		0.2	USEPA Primary MCL [C]		0.05 [I]
1,2-Dibromoethane		0.05			0.1 [I]
1,2-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [E]
1,3-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [F]
1,4-Dichlorobenzene		5	CA Primary MCL [A]	0.5	6 [E]
Dichlorodifluoromethane		1,000	CA DHS State Action Level [F]		

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
1,1-Dichloroethane	Exceedances with respect to federal and state drinking water standards, and state action levels.	5	CA Primary MCL [A]	0.5	3 [E]
1,2-Dichloroethane		0.5	CA Primary MCL [A]	0.5	0.4 [E]
1,1-Dichloroethylene		6	CA Primary MCL [A]	0.5	7 [C]; 10 [E]
cis-1,2-Dichloroethylene	Evaluate water treatment system design.	6	CA Primary MCL [A]	0.5	70 [C]
trans-1,2-Dichloroethylene		10	CA Primary MCL [A]	0.5	100 [C]
Dichloromethane (Methylene Chloride)	Evaluate remedial action performance.	5	CA/USEPA Primary MCL [A] [C]	0.5	4 [E]
1,2-Dichloropropane		5	CA/USEPA Primary MCL [A] [C]	0.5	0.5 [E]
2,2-Dichloropropane					
1,1-Dichloropropene					
1,3-Dichloropropane		0.5	CA Primary MCL [A]		
cis-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
trans-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
Ethane					
Ethene					
Ethybenzene		300	CA Primary MCL [A])	0.5	700 [C]; 300 [E]; 29 [H]
Hexachlorobutadiene					
2-Hexanone					
Isopropylbenzene (Cumene)		770	CA DHS State Action Level [F]	0.5	
Methane					
Methyl acetate					
Methyl ethyl ketone		8,400	Other Taste and Odor [H]	5	
Methyl isobutyl ketone (MIBK)		120	CA DHS State Action Level [F]		1300 [H]
Methylcyclohexane					
Napthalene		170	CA DHS State Action Level [F]		
n-Propylbenzene		260	CA DHS State Action Level [F]		

TABLE 2

Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Styrene	Exceedances with respect to federal and state drinking water standards, and state action levels.	100	CA/USEPA Primary MCL [A] [C]	0.5	11 [H]
1,1,2,2-Tetrachloroethane		1	CA Primary MCL [A]	0.1	0.5 [E];1.5 [I]
Tetrachloroethylene (PCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.06 [E]
Toluene	Evaluate water treatment system design.	150	CA Primary MCL [A]/CA PHG [E]	0.5	42 [H]; 1,000 [C]
1,2,3-Trichlorobenzene	Evaluate remedial action performance.				
1,2,4-Trichlorobenzene		5	CA Primary MCL [A]/CA PHG [E]	0.5	70 [C]
1,1,1-Trichloroethane (1,1,1-TCA)		200	CA/USEPA Primary MCL [A] [C]	0.5	
1,1,2-Trichloroethane		5	CA/USEPA Primary MCL [A] [C]	0.5	5 [I]
Trichloroethylene (TCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.8 [E]
Trichlorofluoromethane		150	CA Primary MCL [A]	5	700 [E]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		1,200	CA Primary MCL [A]	10	4,000 [E]
1,2,4-Trimethylbenzene		330	CA DHS State Action Level [F]		
1,3,5-Trimethylbenzene		330	CA DHS State Action Level [F]		
Vinyl chloride		0.5	CA Primary MCL [A]	0.5	0.05 [E]; 2 [C]
Xylene(s)		1,750	CA Primary MCL [A]	1,800	17 [H]; 10,000 [C]
Additional Volatiles					
Methyl tert-butyl ether (MTBE)	Exceedances with respect to federal and state drinking water standards, and state action levels	`13	CA Secondary MCL [B]	3	13 [E]

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Emergent Compounds	Exceedances with respect to federal and state drinking water standards, and state action levels. Evaluate water treatment system design.				
1,4-Dioxane		3	CA DHS State Action Level [F]		15 [I]
N-Nitrosodimethylamine (NDMA)		0.01	CA DHS State Action Level [F]		0.02 [I]
1,2,3-Trichloropropane (1,2,3-TCP)		0.005	CA DHS State Action Level [F]		

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) California Department of Health Services required Detection limit for Purposes of Reporting (DLR).

(3) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Department of Health Services State Action Level for Taste and Odor.

(H) Other Taste and Odor Thresholds.

(I) CA Proposition 65 Regulatory Level for Drinking Water.

TABLE 3
Expanded Analyte List for Inorganic Emergent Compounds – Omega Chemical OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (3)	Additional ARARs (µg/L)
Emergent Compounds					
Chromium (VI)	Exceedances with respect to federal and state drinking water standards, and state action levels.	11 (0.2) 4	California Toxics Rule for Aquatic Life Protection (H)	1	
Perchlorate		4	CA DHS State Action Level (F)	4 (preliminary)	
	Evaluate water treatment system design.				

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(3) California Department of Health Services required Detection Limit for Purposes of Reporting (DLR).

(4) 0.2 µg/L detection level is needed for comparability to other databases in the region per previous DHS limit.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Proposition 65 Regulatory Level for Drinking Water.

(H) California Toxics Rule for Freshwater Aquatic Life Protection - Continuous (4-day average) Concentration.

(I) California Toxics Rule for Freshwater Aquatic Life Protection - Maximum (1-hr average) Concentration.

(J) Other Taste and Odor Thresholds.

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	3/7/2005	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	33916
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	714.435.6215		

Mattrix:	X	Groundwater	Surface Soil	Air
(check one)		Surface Water	Subsurface Soil	Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y1QZ8	Equip / **Field** / Travel	2/28/2005
Y1R15	Equip / **Field** / Travel	3/3/2005
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y1QZ6	2/28/2005

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y1QZ5	Y1QZ9	2/28/2005	a / **b** / c / d
Y1R08	Y1R07	3/2/2005	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

Sample # / Date (s) of Occurence / Comments

- None
- Pumping Equipment Problems
- Sample Filtering Problems
- Less Than Required Sample Volume
- Low Flow/Recharge Rates
- Preservation Problems
- Samples Not Shipped in 24 hrs.
- Federal Express Delay
- Other

00901005

Author: Richard Bauer/R9/USEPA/US **Date:** 09/28/2004 12:59 PM

TECHNICAL DIRECTION FORM # 00901005

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: 009 **DATE:** 9/28/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	1,4-dioxane, perchlorate, TKN, NH3, Total P, alkalinity, TOC, anions
R04S85	water	up to 35

Instructions: Analyze up to 35 water samples for 1,4-dioxane, perchlorate, TKN, ammonia, total phosphorus, alkalinity, total organic carbon, anions (full list) following R9 Lab SOPs for method for EPA methods 3520/8270C, 314.0, 351.2, 350.1, 365.4, SM 2320, 415.1, 300.0.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report each SDG	30 days from receipt of last sample in

Comments: This TDF continues work started under TDF 00501099

Sampling Dates: 09/06/04--09/10/04:

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
24	W	VOCs + MTBE	OCL03.2	21	CLP
22	W	SVOCs		21	CLP
22	W	TAL metals + boron, silicon	EPA 200.7, 200.8,245.1/CLP	21	CLP
22	W	1,4 dioxane	R9L SOP 315	35	R9 Lab
22	W	Cyanide	EPA 335.4	21	CLP
22	W	ClO4	R9L SOP 314	35	R9 Lab
22	W	Br, Cl, Fl, nitrate-N, nitrite-N, O-phosphate, P, Tot. sulfate.	EPA 300	35	R9 Lab
22	W	TKN	EPA 351.2	35	R9 Lab
22	W	Ammonia	EPA 350.2	35	R9 Lab
22	W	Total Phosphorus	EPA 365.4	35	R9 Lab
22	W	TDS	EPA 160	35	R9 Lab
22	W	Alkalinity	SM 2320B	35	R9 Lab
22	W	TOC	EPA 415.1	35	R9 Lab
22	W	BOD	SM 5210B	35	R9 Lab
22	W	hex. chrome	218.6	35	USACE

Lab Assignment Case Number

R9 Lab Case # R04S85

CLP Case #

Lab Assignments Forwarded

22	W	COD	SM5520D	USACE
22	W	NDMA	1625	USACE
24	W	1,2,3-TCP		USACE

Data Distribution:

EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form, Sections 6- 7.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level	Company	Due Date

Turn Around Times:

Supplemental Data Validation Information :

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Contractor PO: Tom Perina
Sampler: Dan Jablonsky
Company: CH@M Hill
Office Phone Number: 909-890-9857
Mobile Phone Number: 714-227-3324
Email: djablon1@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2

San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-2 RSCC _ September 2004.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study	
Proposed Sampling Dates: September 6 to September 10, 2004	
EPA Project Contact: Christopher Lichens	**Mail Code:** SFD-7-4

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 164 West Hospitality Lane, Suite 2, San Bernardino, CA 92408	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 909.890.9857	**Office Fax:** 909.890.9847
Sampler (if different from above): Dan Jablonski	**E-mail:** djablon1@ch2m.com
Office Phone: 909.890.0371	**Mobile Phone:** 949.307.4364

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004).

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Requested TAT: Standard

Standard turn around time is 35 days. Faster turn around or preliminary report may be available upon request.

Section 5

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.
Electronic report copy (as .pdf file)	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)
Electronic Data Deliverable (EDD)*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

* Excel table. Other EDD formats may be available upon request

Section 6
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[(h)]	Matrix	Number of Samples
Volatile Organic Compounds				
TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)	Water	24
TCL[a] Semivolatile Organic Compounds (SVOCs)	CLP [b]	(c)	Water	22
Emergent Compounds				
1,2,3-TCP	(i)	0.005 µg/L	Water	24
1,4-Dioxane	EPA 8270 [b]	1 µg/L	Water	22
NDMA	Modified EPA Method 1625 [b]	0.02 µg/L	Water	22
Perchlorate	EPA 314 [b ,d,]	5 µg/L	Water	22
Hexavalent Chromium	EPA 218.6 [b, d]	0.2 µg/L	Water	22
Groundwater Treatment and Discharge Parameters				
TAL [a] Metals (field-filtered) plus Boron, Silicon	EPA 200.7[d,b] EPA 200.8[d,b] EPA 245.1/CLP	(g)	Water	22
Cyanide	EPA 335.4[d,b]	10 mg/L	Water	22
Bromide	EPA 300.0[d,b]	1.0 mg/L	Water	22
Chloride	EPA 300.0[d,b]	1.0 mg/L	Water	22
Fluoride	EPA 300.0[d,b]	0.1 mg/L	Water	22
Nitrate-N	EPA 300.0[d,b]	0.1 mg/L	Water	22
Nitrite-N	EPA 300.0[d,b]	0.1 mg/L	Water	22
Orthophosphate-P	EPA 300.0[d,b]	1.0 mg/L	Water	22
Total Sulfate	EPA 300.0[d,b]	1.0 mg/L	Water	22
Total Kjeldahl Nitrogen (TKN)	EPA 351.2[d,b]	0.3 mg/L	Water	22
Ammonia	EPA 350.2[d,b]	0.3 mg/L	Water	22
Total Phosphorus	EPA 365.4[d,b]	0.3 mg/L	Water	22
Total Dissolved Solids (TDS)	EPA 160.1[d,b]	20 mg/L	Water	22
Alkalinity	SM 2320B [b, e]	20 mg/L	Water	22
Total Organic Carbon	EPA 415.1[d]	2.0 mg/L	Water	22

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[h]	Matrix	Number of Samples
BOD	SM 5210B[e]	3 mg/L	Water	22
COD	SM5220D[e]	5.0 mg/L	Water	22

[a] Target Compound List (TCL) and Target Analyte List (TAL) as shown in Table 2 and Appendix B of the QAPP (CH2M HILL, 2004). MTBE: methyl tert-butyl ether.
[b] Volatile organics, semivolatile organics, metals and cyanide may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. For other analytes, the analyses will be carried out by EPA Regional Laboratory or a Contract Laboratory. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP.
[c] For volatile organics, detection limits will be at 1 part per billion (ppb) for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B of the QAPP.
[d] U.S. Environmental Protection Agency, 1979. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, revised March 1983; U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste*, SW846.
[e] *Standard Methods for the Examination of Water and Wastewater*, 17th Edition (1989).
[f] State of California Department of Health Services (DHS) Method Determination of Perchlorate by Ion Chromatography, as detailed in EPA Region IX SOP in Appendix B of the QAPP.
[g] Detection limits provided in Appendix B of the QAPP along with methods for the specific metals. Silicon to be determined as silica by EPA 200.7 and will have a detection level < 0.1 part per million (ppm).
[h] Target detection level is reporting level, see text for explanation.

i The method and QA/QC will follow California State guidance to achieve the needed low regulatory limit. Laboratory-specific standard operating procedures will be defined prior to start of work, and subsequent to selection of laboratory.

Notes:
1) Above sample numbers include 1 lab QC, 2 field duplicates, and 3 ambient blanks.
2) Trip blanks will not be included in this sampling round.
3) See below (7) for expanded analyte list

Section 7
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Volatile Organic Compounds					
Acetone	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Benzene		1	CA Primary MCL [A]	0.5	0.15 [E]
Bromodichloromethane		100	USEPA Primary MCL [C]	0.5	2.5 [I] ; 100-proposed [A]
Bromoform	Evaluate water treatment system design.	100	USEPA Primary MCL [C]	0.5	45 [I] ; 100-proposed [A]
Bromomethane		500	CA Proposition 65 Regulatory Level [I]	0.5	
n-Butylbenzene	Evaluate remedial action performance.	260	CA DHS State Action Level [F]		
sec-Butylbenzene		260	CA DHS State Action Level [F]		
Carbon disulfide		160	CA DHS State Action Level [F]		
Carbon tetrachloride		0.5	CA Primary MCL [A]	0.5	0.1 [E]
Chlorobenzene		100	USEPA Primary MCL [C]		50 [H]
Chloroethane		16	Other Taste and Odor [H]	0.5	100 [I]
Chloroform					
Chloromethane			No Applicable ARAR		
2-Chlorotoluene		140	CA DHS State Action Level [F]		
4-Chlorotoluene		140	CA DHS State Action Level [F]		
Cyclohexane					
Dibromomethane					
Dibromochloromethane					
Dibromochloropropane (DBCP)		0.2	USEPA Primary MCL [C]		0.05 [I]
1,2-Dibromoethane		0.05			0.1 [I]
1,2-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [E]

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
1,3-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [F]
1,4-Dichlorobenzene		5	CA Primary MCL [A]	0.5	6 [E]
Dichlorodifluoromethane		1,000	CA DHS State Action Level [F]		
1,1-Dichloroethane	Exceedances with respect to federal and state drinking water standards, and state action levels.	5	CA Primary MCL [A]	0.5	3 [E]
1,2-Dichloroethane		0.5	CA Primary MCL [A]	0.5	0.4 [E]
1,1-Dichloroethylene		6	CA Primary MCL [A]	0.5	7 [C]; 10 [E]
cis-1,2-Dichloroethylene	Evaluate water treatment system design.	6	CA Primary MCL [A]	0.5	70 [C]
trans-1,2-Dichloroethylene		10	CA Primary MCL [A]	0.5	100 [C]
Dichloromethane (Methylene Chloride)	Evaluate remedial action performance.	5	CA/USEPA Primary MCL [A] [C]	0.5	4 [E]
1,2-Dichloropropane		5	CA/USEPA Primary MCL [A] [C]	0.5	0.5 [E]
2,2-Dichloropropane					
1,1-Dichloropropene					
1,3-Dichloropropene		0.5	CA Primary MCL [A]		
cis-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
trans-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
Ethane					
Ethene					
Ethybenzene		300	CA Primary MCL [A])	0.5	700 [C]; 300 [E]; 29 [H]
Hexachlorobutadiene					
2-Hexanone					
Isopropylbenzene (Cumene)		770	CA DHS State Action Level [F]	0.5	
Methane					
Methyl acetate					
Methyl ethyl ketone		8,400	Other Taste and Odor [H]	5	
Methyl isobutyl ketone (MIBK)		120	CA DHS State Action Level [F]		1300 [H]
Methylcyclohexane					

TABLE 2
Expanded Analyte List – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Napthalene		170	CA DHS State Action Level [F]		
n-Propylbenzene		260	CA DHS State Action Level [F]		

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [(1)]	California DHS DLR (µg/L) [(2)]	Additional Regulatory Limits (µg/L)
Styrene	Exceedances with respect to federal and state drinking water standards, and state action levels.	100	CA/USEPA Primary MCL [(A) (C)]	0.5	11 [(H)]
1,1,2,2-Tetrachloroethane		1	CA Primary MCL [(A)]	0.1	0.5 [(E)];1.5 [(I)]
Tetrachloroethylene (PCE)		5	CA/USEPA Primary MCL [(A) (C)]	0.5	0.06 [(E)]
Toluene	Evaluate water treatment system design.	150	CA Primary MCL [(A)]/CA PHG [(E)]	0.5	42 [(H)]; 1,000 [(C)]
1,2,3-Trichlorobenzene					
1,2,4-Trichlorobenzene	Evaluate remedial action performance.	5	CA Primary MCL [(A)]/CA PHG [(E)]	0.5	70 [(C)]
1,1,1-Trichloroethane (1,1,1-TCA)		200	CA/USEPA Primary MCL [(A) (C)]	0.5	
1,1,2-Trichloroethane		5	CA/USEPA Primary MCL [(A) (C)]	0.5	5 [(I)]
Trichloroethylene (TCE)		5	CA/USEPA Primary MCL [(A) (C)]	0.5	0.8 [(E)]
Trichlorofluoromethane		150	CA Primary MCL [(A)]	5	700 [(E)]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		1,200	CA Primary MCL [(A)]	10	4,000 [(E)]
1,2,4-Trimethylbenzene		330	CA DHS State Action Level [(F)]		
1,3,5-Trimethylbenzene		330	CA DHS State Action Level [(F)]		
Vinyl chloride		0.5	CA Primary MCL [(A)]	0.5	0.05 [(E)]; 2 [(C)]
Xylene(s)		1,750	CA Primary MCL [(A)]	1,800	17 [(H)]; 10,000 [(C)]
Additional Volatiles					
Methyl tert-butyl ether (MTBE)	Exceedances with respect to federal and state drinking water standards, and state action levels	`13	CA Secondary MCL [(B)]	3	13 [(E)]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Semivolatile Organic Compounds					
Acenaphthene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Acenaphthylene					
Acetophenone					
Aniline (Phenylamine) (Aminobenzene)	Evaluate water treatment system design.				
Anthracene	Evaluate remedial action performance.				
Benzaldehyde					
Benzoic Acid (Carboxybenzene)					
Benzo(a)anthracene					
Benzo(a)pyrene		0.2	CA/USEPA Primary MCL [A,] [C]	0.1	0.004 [E]
Benzo(b)fluoranthene					
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Benzyl Alcohol (Phenylmethanol)					
1,1'-Biphenyl					
Bis(2-chloroethoxy)methane					
Bis(2-chloroethyl)ether					
Bis(2-chloroisopropyl)ether					
4-Bromophenyl-phenyl ether					
Butylbenzyl phthalate (BBP)					
Caprolactam					
Carbazole					
4-Chloro-3-methylphenol					
4-Chloroaniline					

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
2-Chloronaphthalene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
2-Chlorophenol					
4-Chlorophenyl-phenyl ether					
Chrysene	Evaluate water treatment system design.				
Di(2-ethylhexyl)adipate		400	CA/USEPA Primary MCL [A] [C]	5	200 [E]
Di(2-ethylhexyl)phthalate	Evaluate remedial action performance.	4	CA Primary MCL [A]	3	6 [C]; 12 [E]
Dibenz(a,h)anthracene					
Dibenzofuran (Diphenylene oxide)					
3,3'-Dichlorobenzidine					
2,4-Dichlorophenol					
Diethyl phthalate (DEP)					
Dimethyl phthalate					
2,4-Dimethylphenol		100	CA DHS State Action Level [F]		
4,6-Dinitro-2-methylphenol					
2,4-Dinitrophenol					
2,4-Dinitrotoluene					
2,6-Dinitrotoluene					
Di-n-butylphthalate (Dibutyl phthalate)					
Di-n-octylphthalate(Dioctyl phthalate)					
Endothall		100	CA/USEPA Primary MCL [A,] [C]	45	580 [E]
Fluoranthene (Idryl)					
Fluorene					
Glyphosate		700	CA/USEPA Primary MCL [A] [C]	25	1,000 [E]
Hexachlorobenzene		1	CA/USEPA Primary MCL [A] [C]	0.5	0.03 [E]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Hexachlorocyclopentadiene	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	CA/USEPA Primary MCL [A] [C]	1	50 [E]
Hexachloroethane					
Indeno(1,2,3-cd)pyrene					
Isophorone	Evaluate water treatment system design.				
2-Methylnaphthalene					
2-Methylphenol	Evaluate remedial action performance.				
4-Methylphenol					
3,4-Methylphenol					
2-Nitroaniline					
3-Nitroaniline					
2-Nitrophenol					
4-Nitroaniline					
4-Nitrophenol					
Pentachlorophenol		1	CA/USEPA Primary MCL [A] [C]	0.2	0.4 [E]
Phenanthrene					
Phenol		4,200	CA DHS State Action Level [F]		
Pyrene					
Pyridine					
2,4,6-Trichlorophenol					
2,4,5-Trichlorophenol					
Emergent Compounds	Exceedances with respect to federal and state drinking water standards, and state action levels.				
1,4-Dioxane		3	CA DHS State Action Level [F]		15 [I]
N-Nitrosodimethylamine (NDMA)		0.01	CA DHS State Action Level [F]		0.02 [I]
1,2,3-Trichloropropane (1,2,3-TCP)	Evaluate water treatment system design.	0.005	CA DHS State Action Level [F]		

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (2)	Additional Regulatory Limits (µg/L)
Treatment/Discharge Parameters					
Total Organic Parameters	Evaluate groundwater treatment alternatives.				
Total Organic Carbon					
Biological Oxygen Demand	Evaluate treated groundwater discharge alternatives.				
Chemical Oxygen Demand					

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) California Department of Health Services required Detection limit for Purposes of Reporting (DLR).

(3) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Department of Health Services State Action Level for Taste and Odor.

(H) Other Taste and Odor Thresholds.

(I) CA Proposition 65 Regulatory Level for Drinking Water.

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Emergent Compounds					
Chromium (VI)	Exceedances with respect to federal and state drinking water standards, and state action levels.	11 (0.2) [4]	California Toxics Rule for Aquatic Life Protection [H]	1	
Perchlorate		4	CA DHS State Action Level [F]	4 (preliminary)	
	Evaluate water treatment system design.				
TAL Inorganics					
Aluminum	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	USEPA Secondary MCL [D]11	50	200 [B]; 600 [E]
Antimony		6	CA/USEPA Primary MCL [A] [C]	6	20 [E]
Arsenic		10	USEPA Primary MCL [C]	2	50 [A]; 0.004 [E]
Barium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	1,000	CA Primary MCL [A]	100	2,000 [C] [E]
Beryllium		4	CA/USEPA Primary MCL [A] [C]	1	1 [E]
Cadmium		5	CA/USEPA Primary MCL [A] [C]	1	0.07 [E]; 2.6 [3] [H]
Calcium					
Chromium (total)		50	CA Primary MCL [A]	10	100 [C]
Cobalt					
Copper		11 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	170 [E] ; 1300 [F]
Iron		300	CA/USEPA Secondary MCL [B] [D]	100	
Lead		3.1	California Toxics Rule for Aquatic Life Protection [H]	5	15 [F]; 2 [E]; 0.25 [G]
Magnesium					
Manganese		50	CA/USEPA Secondary MCL [B] [D]	20	
Mercury		2	CA/USEPA Primary MCL [A] [C]	1	1.2 [E]
Molybdenum					
Nickel		61	California Toxics Rule for Aquatic Life Protection [H]	10	100 [A];12 [E]
Potassium					
Selenium		5	California Toxics Rule for Aquatic Life Protection [H]	5	50 [A] [C]
Silver	Exceedances with respect	4.7 [2]	California Toxics Rule for Aquatic Life Protection [I]	10	100 [B] [D]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Sodium	to federal and state drinking water standards, and state action levels.				
Thallium		2.0	CA/USEPA Primary MCL [A] [C]	1	0.1 [E]
Vanadium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	50	CA DHS State Action Level [F]	3 (preliminary)	
Zinc		140 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	5,000 [B] [D]
Cyanide		5.2	California Toxics Rule for Aquatic Life Protection [H]	100	200 [C];150 [E]
Additional Inorganics					
Boron	Evaluate groundwater treatment alternatives and treated groundwater discharge options	1,000	CA DHS State Action Level [F]		
Silicon					
Treatment/Discharge Parameters					
pH	Evaluate groundwater treatment alternatives and treated groundwater discharge options	6.5 to 8.5	USEPA Secondary MCL [D]		
Alkalinity					
Ammonia		500	Other Tastes and Odors [J]		
Bicarbonate	Exceedances with respect to federal and state drinking water standards, and state action levels				
Bromide					
Chloride		250,000	CA/USEPA Secondary MCL [B,D]		
Fluoride		1,000	CA PHG [E]	100	2,000 [A] [D]
Nitrate (as N)		10,000	USEPA Primary MCL [C]		10,000 [E]
Nitrite (as N)		1,000	CA/USEPA Primary MCL [A] [C]	400	1,000 [E]
Phosphorus (orthophosphate, total phosphorus)					
Sulfate		250,000	CA Secondary MCL [B]	500	250,000 [D]

TABLE A-1
Data Needs and Uses – Regulatory Limits for Organic Parameters and Emergent Compounds
Quality Assurance Project Plan, Omega OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (3)	Additional ARARs (µg/L)
Total dissolved solids (TDS)	Evaluate groundwater treatment alternatives and treated groundwater discharge options Exceedances with respect to federal and state drinking water standards, and state action levels	250,000	CA/USEPA Secondary MCL (B,D)		

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(3) California Department of Health Services required Detection Limit for Purposes of Reporting (DLR).

(4) 0.2 µg/L detection level is needed for comparability to other databases in the region per previous DHS limit.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Proposition 65 Regulatory Level for Drinking Water.

(H) California Toxics Rule for Freshwater Aquatic Life Protection - Continuous (4-day average) Concentration.

(I) California Toxics Rule for Freshwater Aquatic Life Protection - Maximum (1-hr average) Concentration.

(J) Other Taste and Odor Thresholds.

Sampling Dates: 11/11/04-- 11/12/04

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	Lab
10	SV	VOCs	TO-15	R9L

Lab Assignment Number **Case**

R9 Lab Case # R05S17

TAT

Data Distribution:
EDD (CH2M-Hill format): tperina@ch2m.com
.pdf report copy: tperina@ch2m.com

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Turn Around Times:

Supplemental Data Validation Information :
1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Dan Jablonski
Company: CH@M Hill
Office Phone Number: 714-435-6215

Contractor Project Manager: Tom Perina
tperina@ch2m.com
951-276-3003, ext. 320

Mobile Phone Number: 949-307-4364
Email: djablon1@ch2m.com
Office Address: CH@M Hill
3550 Vine Street, Suite 320
Riverside, CA 92507

EVENT NOTES

EVENT NOTES:

RSCC FORM

Omega OU-1 RSCC Form November 2004 Air.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method or R9 Lab SOP number)	Matrix	No. of samples
Air volatile organics** (R9 laboratory procedure)	Air	10

*The analyses for the organics and metals listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP. Required detection limits are listed below.
** See section 6 for analyte list and needed detection levels

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
Volatile Organic Compounds			
Acetone			10
Benzene			2.0
Bromobenzene			NT
Bromochloromethane			NT
Bromodichloromethane			2.0
Bromoform			2.0
Bromomethane			2.0
n-Butylbenzene			NT
sec-Butylbenzene			NT
tert-Butylbenzene			NT
Carbon tetrachloride			2.0
Chlorobenzene			2.0
Chloroethane			4.0
Chloroform			2.0
Chloromethane			4.0
2-Chlorotoluene			NT
4-Chlorotoluene			NT
Dibromochloromethane			2.0
1,2-Dibromo-3-chloropropane			NT
1,2-Dibromoethane			2.0
Dibromomethane			NT
1,2-Dichlorobenzene			2.0
1,3-Dichlorobenzene			NT
1,4-Dichlorobenzene			2.0
Dichlorodifluoromethane (Freon 12)			2.0
1,1-Dichloroethane			2.0
1,2-Dichloroethane			2.0
1,1-Dichloroethene			2.0
cis-1,2-Dichloroethene			2.0
trans-1,2-Dichloroethene			2.0
1,2-Dichloropropane			2.0
1,3-Dichloropropane			NT
2,2-Dichloropropane			NT
1,1-Dichloropropene			NT
cis-1,3-Dichloropropene			2.0

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
trans-1,3-Dichloropropene			2.0
Ethylbenzene			2.0
Hexachlorobutadiene			4.0
Isopropylbenzene			NT
p-Isopropyltoluene			NT
Methylene chloride			2.0
Methyl tert-butyl ether			NT
Naphthalene			NT
n-Propylbenzene			NT
Styrene			2.0
1,1,1,2-Tetrachloroethane			NT
1,1,2,2-Tetrachloroethane			2.0
Tetrachloroethene			2.0
Toluene			2.0
1,2,3-Trichlorobenzene			NT
1,2,4-Trichlorobenzene			2.0
1,1,1-Trichloroethane			2.0
1,1,2-Trichloroethane			2.0
Trichloroethene			2.0
Trichlorofluoromethane (Freon 11)			2.0
1,2,3-Trichloropropane			NT
Trichlorotrifluoroethane (Freon 113)			2.0
1,2,4-Trimethylbenzene			2.0
1,3,5-Trimethylbenzene			2.0
Vinyl chloride			2.0
o-Xylene			2.0
m,p-Xylenes			2.0

Notes:
[1]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.

N/A – Not applicable
NT – Not a target analyte

TECHNICAL DIRECTION NO. 00902005

SITE ACCOUNT NO: 09 BC LA00 **SITE NAME: Omega Chemical**
CERCLIS [] RI/RA [] Site Assess [] Enforcement [X] Emergency Resp [ ] Brownfields [] Fed Fac.

TO NUMBER: 009 **DATE: 11-18-04**

TASK: 1. Region 9 Superfund Field Analytical Support Program(FASP) **TOPO:** Greg Nagle

DESCRIPTION OF SERVICES TO BE PERFORMED: **(**Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Summary - Prepare for and perform sampling and VOC analysis by Hapsite SOP #910 at various locations on the Omega Chemical site in Whittier, CA.

Provide support of ambient air sampling at the Omega site. Support will be required sporadically throughout FY2005. Grab sampling of indoor and outdoor air at preselected locations in and around the site.

Perform analysis of ambient air for VOCs by Hapsite SOP#910. Analysis may be required sporadically throughout FY 2005. Primary chemicals of concern include; PCE, TCE, 1,1-DCE, cis-1,2-DCE and Chloroform. TEN (10) other compounds detected at lower concentrations in the groundwater include; 1,2-DCA, 1,1-DCA, 1,1,1-TCA, trans-1,2-DCE, 1,2-DCP, vinyl chloride, methylene chloride, carbon tetrachloride, Freon 11 and Freon 113).

At Skateland, the Hapsite will be used primally for determining preferential pathways for contaminants entering the building from the subsurface through condiuts such as cracks in the floor or where utilities (electrical, gas sewer etc..) may enter the building. Specific sample collection points will be determined upon inspection at the discretion of the analyst.

The Hapsite will be setup on a cart with rollers to move within tennant buildings. Some battery operation will be required. Preliminary data should be delivered to the project manager (or designee) on the day the samples are received, or upon completion of analysis the following day.

Deliverables	**Due dates**
Provide Screening data to PM or designee	Daily during analysis
Prepare Final Report and Data Submittal	Within 30 days of demobilization

00901026

Author: Richard Bauer/R9/USEPA/US **Date:** 11/29/2004 08:51 AM

TECHNICAL DIRECTION FORM # 00901026

SITE ACCOUNT NO: 09 BC LA 02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: 009 **DATE:** 11/29/04

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	1,4-dioxane, perchlorate, TKN, NH3, Total P, alkalinity, TOC, anions
R05S18	water	up to 38

Instructions: Analyze up to 38 water samples for 1,4-dioxane, perchlorate, TKN, ammonia, total phosphorus, alkalinity, total organic carbon, anions (full list) following R9 Lab SOPs for method for EPA methods 3520/8270C, 314.0, 351.2, 350.1, 365.4, SM 2320, 415.1, 300.0.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of last sample in each SDG
[x] Analytical Report each SDG	30 days from receipt of last sample in

Comments:

Omega Chemical Superfund Site OU-2 Remedial Investigation/Feasibility

Sampling Dates: 11/29/04--12/10/04: Study

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
35	W	VOCs + MTBE	OCL03.221	CLP	
32	W	SVOCs	OLC03.221	CLP	
32	W	TAL metals + B,SiO2	CLP flex	21	CLP
32	W	1,4 dioxane	R9L SOP 315	35	R9 Lab
32	W	Cyanide	CILM	21	CLP
32	W	ClO4	EPA 314	35	R9 Lab
32	W	Anions (full list	EPA 300	35	R9 Lab
32	W	TKN	EPA 351.2	35	R9 Lab
32	W	Ammonia	EPA 350.2	35	R9 Lab
32	W	Total Phosphorus	EPA 365.4	35	R9 Lab
32	W	TDS	EPA 160	35	R9 Lab
32	W	Alkalinity	SM 2320B	35	R9 Lab
32	W	TOC	EPA 415.1	35	R9 Lab
32	W	BOD	SM 5210B	35	R9 Lab
32	W	hex. chrome	218.6	35	USACE
32	W	COD	SM5520D		USACE

Lab Assignment Case Number

R9 Lab Case # R05S18

CLP Case #

Lab Assignments Forwarded

32	W	NDMA	1625	USACE
35	W	1,2,3-TCP		USACE

*

Data Distribution:

EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

tperina@ch2m.com, djablon1@ch2m.com

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form, Sections 6- 7.

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level	Company	Due Date

Turn Around Times:

Supplemental Data Validation Information :

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Contractor PO: Tom Perina Phone: 951-276-3003, Ext. 24
Sampler: Dan Jablonsky
Company: CH@M Hill
Office Phone Number: 951-276-3003
Mobile Phone Number: 714-227-3324
Email: djablon1@ch2m.com
Office Address: CH@M Hill
3550 Vine St., Suite 320

Riverside, CA 92507

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-2 RSCC Form December 2004.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
SUPERFUND ANALYTICAL REQUEST FORM

Section 1

Comment [Watermark1]:

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study		
Site Name: Omega Chemical OU-2	**SS ID:** BC	**OU:** 2
[X] **RI/FS/RA [ ] Enforcement [ ] PA/SI [ ] Emergency Response [ ] Fed. Facilities**		
Proposed Sampling Dates: Nov. 30 to Dec. 2, 2004 and Dec.6 to Dec.10, 2004		
EPA Project Manager: Christopher Lichens	**Mail Code:** SFD-7-4	

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 3550 Vine Street, Suite 320 Riverside, CA 92507	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 951.276.3003 ext. 24	**Office Fax:** 714.424.2204
Sampler: Dan Jablonski **(if different from above):**	**E-mail:** djablon1@ch2m.com
Office Phone: 714.435.6215	**Mobile Phone:** 949.307.4364

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004).
EPA Quality Assurance Office DCN (if available):

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Christopher Lichens/ EPA (Lichens.Christopher@epamail.epa.gov)
Electronic report copy	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Dan Jablonski/CH2M HILL (djablon1@ch2m.com)
Electronic Data Deliverable (EDD) for R9 Lab Results*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[h]	Matrix	Number of Samples
Volatile Organic Compounds				
TCL Volatile Organic Compounds (VOCs) plus MTBE [a]	EPA 524.2/CLP [b]	(c)	Water	35
TCL[a] Semivolatile Organic Compounds (SVOCs)	CLP [b]	(c)	Water	32
Emergent Compounds				
1,2,3-TCP	(i)	0.005 µg/L	Water	35
1,4-Dioxane	EPA 8270 [b]	1 µg/L	Water	32
NDMA	Modified EPA Method 1625 [b]	0.02 µg/L	Water	32
Perchlorate	EPA 314 [b ,d,]	5 µg/L	Water	32
Hexavalent Chromium	EPA 218.6 [b, d]	0.2 µg/L	Water	32
Groundwater Treatment and Discharge Parameters				
TAL [a] Metals (field-filtered) plus Boron, Silicon	EPA 200.7[d,b] EPA 200.8[d,b] EPA 245.1/CLP	(g)	Water	32
Cyanide	EPA 335.4[d,b]	10 mg/L	Water	32
Bromide	EPA 300.0[d,b]	1.0 mg/L	Water	32
Chloride	EPA 300.0[d,b]	1.0 mg/L	Water	32
Fluoride	EPA 300.0[d,b]	0.1 mg/L	Water	32
Nitrate-N	EPA 300.0[d,b]	0.1 mg/L	Water	32
Nitrite-N	EPA 300.0[d,b]	0.1 mg/L	Water	32
Orthophosphate-P	EPA 300.0[d,b]	1.0 mg/L	Water	32
Total Sulfate	EPA 300.0[d,b]	1.0 mg/L	Water	32
Total Kjeldahl Nitrogen (TKN)	EPA 351.2[d,b]	0.3 mg/L	Water	32
Ammonia	EPA 350.2[d,b]	0.3 mg/L	Water	32
Total Phosphorus	EPA 365.4[d,b]	0.3 mg/L	Water	32
Total Dissolved Solids (TDS)	EPA 160.1[d,b]	20 mg/L	Water	32
Alkalinity	SM 2320B [b, e]	20 mg/L	Water	32
Total Organic Carbon	EPA 415.1[d]	2.0 mg/L	Water	32

TABLE 1
Methods, Target Detection Limits, and Number of Samples – Omega Chemical OU-2

Parameter	Method	Target Detection Limit[h]	Matrix	Number of Samples
BOD	SM 5210B[e]	3 mg/L	Water	32
COD	SM5220D[e]	5.0 mg/L	Water	32

[a] Target Compound List (TCL) and Target Analyte List (TAL) as shown in Table 2 and Table 3 and Appendix B of the QAPP (CH2M HILL, 2004). MTBE: methyl tert-butyl ether.
[b] Volatile organics, semivolatile organics, metals and cyanide may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. For other analytes, the analyses will be carried out by EPA Regional Laboratory or a Contract Laboratory. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP.
[c] For volatile organics, detection limits will be at 1 part per billion (ppb) for all except 0.5 ppb for vinyl chloride, carbon tetrachloride, 1,2 dichlorethane, cis and trans-1,3-dichloropropene, and 2 ppb for 1,2-dibromo-3-chloropropene. CLP detection limits are shown in Appendix B of the QAPP.
[d] U.S. Environmental Protection Agency, 1979. *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, revised March 1983; U.S. Environmental Protection Agency, *Test Methods for Evaluating Solid Waste*, SW846.
[e] *Standard Methods for the Examination of Water and Wastewater*, 17th Edition (1989).
[f] State of California Department of Health Services (DHS) Method Determination of Perchlorate by Ion Chromatography, as detailed in EPA Region IX SOP in Appendix B of the QAPP.
[g] Detection limits provided in Appendix B of the QAPP along with methods for the specific metals. Silicon to be determined as silica by EPA 200.7 and will have a detection level < 0.1 part per million (ppm).
[h] Target detection level is reporting level, see text for explanation.

i The method and QA/QC will follow California State guidance to achieve the needed low regulatory limit. Laboratory-specific standard operating procedures will be defined prior to start of work, and subsequent to selection of laboratory.

Notes:
1) Above sample numbers include 2 lab QC, 1 equipment blank, 3 field duplicates, and 2 ambient blanks.
2) Trip blanks will not be included in this sampling round.
3) See below (6) for expanded analyte list

b) See section 6 for analyte list and needed detection levels

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

See attached Table 2 and Table 3.

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Volatile Organic Compounds					
Acetone	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Benzene		1	CA Primary MCL [A]	0.5	0.15 [E]
Bromodichloromethane		100	USEPA Primary MCL [C]	0.5	2.5 [I] ; 100-proposed [A]
Bromoform	Evaluate water treatment system design.	100	USEPA Primary MCL [C]	0.5	45 [I] ; 100-proposed [A]
Bromomethane		500	CA Proposition 65 Regulatory Level [I]	0.5	
n-Butylbenzene	Evaluate remedial action performance.	260	CA DHS State Action Level [F]		
sec-Butylbenzene		260	CA DHS State Action Level [F]		
Carbon disulfide		160	CA DHS State Action Level [F]		
Carbon tetrachloride		0.5	CA Primary MCL [A]	0.5	0.1 [E]
Chlorobenzene		100	USEPA Primary MCL [C]		50 [H]
Chloroethane		16	Other Taste and Odor [H]	0.5	100 [I]
Chloroform					
Chloromethane			No Applicable ARAR		
2-Chlorotoluene		140	CA DHS State Action Level [F]		
4-Chlorotoluene		140	CA DHS State Action Level [F]		
Cyclohexane					
Dibromomethane					
Dibromochloromethane					
Dibromochloropropane (DBCP)		0.2	USEPA Primary MCL [C]		0.05 [I]
1,2-Dibromoethane		0.05			0.1 [I]
1,2-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [E]
1,3-Dichlorobenzene		600	CA DHS State Action Level [G]	0.5	600 [F]
1,4-Dichlorobenzene		5	CA Primary MCL [A]	0.5	6 [E]
Dichlorodifluoromethane		1,000	CA DHS State Action Level [F]		

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
1,1-Dichloroethane	Exceedances with respect to federal and state drinking water standards, and state action levels.	5	CA Primary MCL [A]	0.5	3 [E]
1,2-Dichloroethane		0.5	CA Primary MCL [A]	0.5	0.4 [E]
1,1-Dichloroethylene		6	CA Primary MCL [A]	0.5	7 [C]; 10 [E]
cis-1,2-Dichloroethylene	Evaluate water treatment system design.	6	CA Primary MCL [A]	0.5	70 [C]
trans-1,2-Dichloroethylene		10	CA Primary MCL [A]	0.5	100 [C]
Dichloromethane (Methylene Chloride)	Evaluate remedial action performance.	5	CA/USEPA Primary MCL [A] [C]	0.5	4 [E]
1,2-Dichloropropane		5	CA/USEPA Primary MCL [A] [C]	0.5	0.5 [E]
2,2-Dichloropropane					
1,1-Dichloropropene					
1,3-Dichloropropene		0.5	CA Primary MCL [A]		
cis-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
trans-1,3-Dichloropropene		0.5	CA Primary MCL [A]	0.5	0.2 [E]
Ethane					
Ethene					
Ethybenzene		300	CA Primary MCL [A])	0.5	700 [C]; 300 [E]; 29 [H]
Hexachlorobutadiene					
2-Hexanone					
Isopropylbenzene (Cumene)		770	CA DHS State Action Level [F]	0.5	
Methane					
Methyl acetate					
Methyl ethyl ketone		8,400	Other Taste and Odor [H]	5	
Methyl isobutyl ketone (MIBK)		120	CA DHS State Action Level [F]		1300 [H]
Methylcyclohexane					
Napthalene		170	CA DHS State Action Level [F]		
n-Propylbenzene		260	CA DHS State Action Level [F]		

TABLE 2

Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Styrene	Exceedances with respect to federal and state drinking water standards, and state action levels.	100	CA/USEPA Primary MCL [A] [C]	0.5	11 [H]
1,1,2,2-Tetrachloroethane		1	CA Primary MCL [A]	0.1	0.5 [E];1.5 [I]
Tetrachloroethylene (PCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.06 [E]
Toluene	Evaluate water treatment system design.	150	CA Primary MCL [A]/CA PHG [E]	0.5	42 [H]; 1,000 [C]
1,2,3-Trichlorobenzene	Evaluate remedial action performance.				
1,2,4-Trichlorobenzene		5	CA Primary MCL [A]/CA PHG [E]	0.5	70 [C]
1,1,1-Trichloroethane (1,1,1-TCA)		200	CA/USEPA Primary MCL [A] [C]	0.5	
1,1,2-Trichloroethane		5	CA/USEPA Primary MCL [A] [C]	0.5	5 [I]
Trichloroethylene (TCE)		5	CA/USEPA Primary MCL [A] [C]	0.5	0.8 [E]
Trichlorofluoromethane		150	CA Primary MCL [A]	5	700 [E]
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)		1,200	CA Primary MCL [A]	10	4,000 [E]
1,2,4-Trimethylbenzene		330	CA DHS State Action Level [F]		
1,3,5-Trimethylbenzene		330	CA DHS State Action Level [F]		
Vinyl chloride		0.5	CA Primary MCL [A]	0.5	0.05 [E]; 2 [C]
Xylene(s)		1,750	CA Primary MCL [A]	1,800	17 [H]; 10,000 [C]
Additional Volatiles					
Methyl tert-butyl ether (MTBE)	Exceedances with respect to federal and state drinking water standards, and state action levels	`13	CA Secondary MCL [B]	3	13 [E]

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
TCL Semivolatile Organic Compounds					
Acenaphthene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
Acenaphthylene					
Acetophenone					
Aniline (Phenylamine) (Aminobenzene)	Evaluate water treatment system design.				
Anthracene	Evaluate remedial action performance.				
Benzaldehyde					
Benzoic Acid (Carboxybenzene)					
Benzo(a)anthracene					
Benzo(a)pyrene		0.2	CA/USEPA Primary MCL [A,) (C]	0.1	0.004 [E]
Benzo(b)fluoranthene					
Benzo(g,h,i)perylene					
Benzo(k)fluoranthene					
Benzyl Alcohol (Phenylmethanol)					
1,1'-Biphenyl					
Bis(2-chloroethoxy)methane					
Bis(2-chloroethyl)ether					
Bis(2-chloroisopropyl)ether					
4-Bromophenyl-phenyl ether					
Butylbenzyl phthalate (BBP)					
Caprolactam					
Carbazole					
4-Chloro-3-methylphenol					
4-Chloroaniline					

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
2-Chloronaphthalene	Exceedances with respect to federal and state drinking water standards, and state action levels.				
2-Chlorophenol					
4-Chlorophenyl-phenyl ether					
Chrysene	Evaluate water treatment system design.				
Di(2-ethylhexyl)adipate		400	CA/USEPA Primary MCL [A] [C]	5	200 [E]
Di(2-ethylhexyl)phthalate	Evaluate remedial action performance.	4	CA Primary MCL [A]	3	6 [C]; 12 [E]
Dibenz(a,h)anthracene					
Dibenzofuran (Diphenylene oxide)					
3,3'-Dichlorobenzidine					
2,4-Dichlorophenol					
Diethyl phthalate (DEP)					
Dimethyl phthalate					
2,4-Dimethylphenol		100	CA DHS State Action Level [F]		
4,6-Dinitro-2-methylphenol					
2,4-Dinitrophenol					
2,4-Dinitrotoluene					
2,6-Dinitrotoluene					
Di-n-butylphthalate (Dibutyl phthalate)					
Di-n-octylphthalate(Dioctyl phthalate)					
Endothall		100	CA/USEPA Primary MCL [A,] [C]	45	580 [E]
Fluoranthene (Idryl)					
Fluorene					
Glyphosate		700	CA/USEPA Primary MCL [A] [C]	25	1,000 [E]
Hexachlorobenzene		1	CA/USEPA Primary MCL [A] [C]	0.5	0.03 [E]

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [2]	Additional Regulatory Limits (µg/L)
Hexachlorocyclopentadiene	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	CA/USEPA Primary MCL [A] [C]	1	50 [E]
Hexachloroethane					
Indeno(1,2,3-cd)pyrene					
Isophorone	Evaluate water treatment system design.				
2-Methylnaphthalene					
2-Methylphenol	Evaluate remedial action performance.				
4-Methylphenol					
3,4-Methylphenol					
2-Nitroaniline					
3-Nitroaniline					
2-Nitrophenol					
4-Nitroaniline					
4-Nitrophenol					
Pentachlorophenol		1	CA/USEPA Primary MCL [A] [C]	0.2	0.4 [E]
Phenanthrene					
Phenol		4,200	CA DHS State Action Level [F]		
Pyrene					
Pyridine					
2,4,6-Trichlorophenol					
2,4,5-Trichlorophenol					
Emergent Compounds	Exceedances with respect to federal and state drinking water standards, and state action levels.				
1,4-Dioxane		3	CA DHS State Action Level [F]		15 [I]
N-Nitrosodimethylamine (NDMA)		0.01	CA DHS State Action Level [F]		0.02 [I]
1,2,3-Trichloropropane (1,2,3-TCP)	Evaluate water treatment system design.	0.005	CA DHS State Action Level [F]		

TABLE 2
Expanded Analyte List for Organic Parameters and Emergent Compounds – Omega Chemical OU-2

Organic Compound	Uses/Decisions	Applicable Regulatory Limit (µg/L)	Applicable ARAR (1)	California DHS DLR (µg/L) (2)	Additional Regulatory Limits (µg/L)
Treatment/Discharge Parameters					
Total Organic Parameters	Evaluate groundwater treatment alternatives.				
Total Organic Carbon					
Biological Oxygen Demand	Evaluate treated groundwater discharge alternatives.				
Chemical Oxygen Demand					

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) California Department of Health Services required Detection limit for Purposes of Reporting (DLR).

(3) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Department of Health Services State Action Level for Taste and Odor.

(H) Other Taste and Odor Thresholds.

(I) CA Proposition 65 Regulatory Level for Drinking Water.

TABLE 3
Expanded Analyte List for Inorganic Parameters and Emergent Compounds – Omega Chemical OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Emergent Compounds					
Chromium (VI)	Exceedances with respect to federal and state drinking water standards, and state action levels.	11 (0.2) [4]	California Toxics Rule for Aquatic Life Protection [H]	1	
Perchlorate		4	CA DHS State Action Level [F]	4 (preliminary)	
	Evaluate water treatment system design.				
TAL Inorganics					
Aluminum	Exceedances with respect to federal and state drinking water standards, and state action levels.	50	USEPA Secondary MCL [D]11	50	200 [B]; 600 [E]
Antimony		6	CA/USEPA Primary MCL [A] [C]	6	20 [E]
Arsenic		10	USEPA Primary MCL [C]	2	50 [A]; 0.004 [E]
Barium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	1,000	CA Primary MCL [A]	100	2,000 [C] [E]
Beryllium		4	CA/USEPA Primary MCL [A] [C]	1	1 [E]
Cadmium		5	CA/USEPA Primary MCL [A] [C]	1	0.07 [E]; 2.6 [3] [H]
Calcium					
Chromium (total)		50	CA Primary MCL [A]	10	100 [C]
Cobalt					
Copper		11 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	170 [E]; 1300 [F]
Iron		300	CA/USEPA Secondary MCL [B] [D]	100	
Lead		3.1	California Toxics Rule for Aquatic Life Protection [H]	5	15 [F]; 2 [E]; 0.25 [G]
Magnesium					
Manganese		50	CA/USEPA Secondary MCL [B] [D]	20	
Mercury		2	CA/USEPA Primary MCL [A] [C]	1	1.2 [E]
Molybdenum					
Nickel		61	California Toxics Rule for Aquatic Life Protection [H]	10	100 [A];12 [E]
Potassium					
Selenium		5	California Toxics Rule for Aquatic Life Protection [H]	5	50 [A] [C]
Silver	Exceedances with respect	4.7 [2]	California Toxics Rule for Aquatic Life Protection [I]	10	100 [B] [D]

TABLE 3
Expanded Analyte List for Inorganic Parameters and Emergent Compounds – Omega Chemical OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Sodium	to federal and state drinking water standards, and state action levels.				
Thallium		2.0	CA/USEPA Primary MCL [A] [C]	1	0.1 [E]
Vanadium	Evaluate groundwater treatment alternatives and treated groundwater discharge options.	50	CA DHS State Action Level [F]	3 (preliminary)	
Zinc		140 [2]	California Toxics Rule for Aquatic Life Protection [H]	50	5,000 [B] [D]
Cyanide		5.2	California Toxics Rule for Aquatic Life Protection [H]	100	200 [C];150 [E]
Additional Inorganics					
Boron	Evaluate groundwater treatment alternatives and treated groundwater discharge options	1,000	CA DHS State Action Level [F]		
Silicon					
Treatment/Discharge Parameters					
pH	Evaluate groundwater treatment alternatives and treated groundwater discharge options	6.5 to 8.5	USEPA Secondary MCL [D]		
Alkalinity					
Ammonia		500	Other Tastes and Odors [J]		
Bicarbonate	Exceedances with respect to federal and state drinking water standards, and state action levels				
Bromide					
Chloride		250,000	CA/USEPA Secondary MCL [B,D]		
Fluoride		1,000	CA PHG [E]	100	2,000 [A] [D]
Nitrate (as N)		10,000	USEPA Primary MCL [C]		10,000 [E]
Nitrite (as N)		1,000	CA/USEPA Primary MCL [A] [C]	400	1,000 [E]
Phosphorus (orthophosphate, total phosphorus)					
Sulfate		250,000	CA Secondary MCL [B]	500	250,000 [D]

TABLE 3
Expanded Analyte List for Inorganic Parameters and Emergent Compounds – Omega Chemical OU-2

Inorganic Parameter	Uses/Decisions	Applicable Limit (µg/L)	Applicable ARAR [1]	California DHS DLR (µg/L) [3]	Additional ARARs (µg/L)
Total dissolved solids (TDS)	Evaluate groundwater treatment alternatives and treated groundwater discharge options Exceedances with respect to federal and state drinking water standards, and state action levels	250,000	CA/USEPA Secondary MCL [B,D]		

NOTES:

(1) ARARs from June 2003 California EPA Compilation of Water Quality Goals and Updates through September 2003.

(2) Calculated ARAR based on hardness = 120 mg/L as $CaCO_3$.

(3) California Department of Health Services required Detection Limit for Purposes of Reporting (DLR).

(4) 0.2 µg/L detection level is needed for comparability to other databases in the region per previous DHS limit.

(A) CA Department of Health Services Primary MCL for Drinking Water.

(B) CA Department of Health Services Secondary MCL for Drinking Water.

(C) USEPA Primary MCL for Drinking Water.

(D) USEPA Secondary MCL for Drinking Water.

(E) CA Office of Environmental Health Hazard Assessment Public Health Goal for Drinking Water.

(F) CA Department of Health Services State Action Level for Toxicity.

(G) CA Proposition 65 Regulatory Level for Drinking Water.

(H) California Toxics Rule for Freshwater Aquatic Life Protection - Continuous (4-day average) Concentration.

(I) California Toxics Rule for Freshwater Aquatic Life Protection - Maximum (1-hr average) Concentration.

(J) Other Taste and Odor Thresholds.

Sampling Dates: 12/27/04 - 12/30/04

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	Lab
4	air	VOCs	TO-15	R9L

TAT
21 day TAT

Data Distribution:
EDD (CH2M-Hill format): tperina@ch2m.com
.pdf report copy: tperina@ch2m.com

Lab Assignment Number **Case**

R9 Lab Case # R05S21

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Turn Around Times:

Supplemental Data Validation Information :
1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Tom Perina
Company: CH2M-Hill
Office Phone Number: 951.276.3003 ext. 24

Mobile Phone Number:
Email:
Office Address: CH2M-Hill
3550 Vine Street, Suite 320
Riverside, CA 92507

EVENT NOTES

EVENT NOTES:

RSCC FORM

Omega OU-1 RSCC Form December 2004 Indoor Air.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method, CLP SOW number, or R9 Lab SOP number)	Matrix	No. of samples	TAT	Review/ Validation
VOCs (EPA Region 9 Lab Procedure [a, b]), see list of analytes and detection limits below	Air	4	21 days	Tier 3

a) The analyses for the organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP.

b) See section 6 for analyte list and needed detection levels.

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
Volatile Organic Compounds			
Acetone			10
Benzene			2.0
Bromobenzene			NT
Bromochloromethane			NT
Bromodichloromethane			2.0
Bromoform			2.0
Bromomethane			2.0
n-Butylbenzene			NT
sec-Butylbenzene			NT
tert-Butylbenzene			NT
Carbon tetrachloride			2.0
Chlorobenzene			2.0
Chloroethane			4.0
Chloroform			2.0
Chloromethane			4.0
2-Chlorotoluene			NT
4-Chlorotoluene			NT
Dibromochloromethane			2.0
1,2-Dibromo-3-chloropropane			NT
1,2-Dibromoethane			2.0
Dibromomethane			NT
1,2-Dichlorobenzene			2.0
1,3-Dichlorobenzene			NT
1,4-Dichlorobenzene			2.0
Dichlorodifluoromethane (Freon 12)			2.0
1,1-Dichloroethane			2.0
1,2-Dichloroethane			2.0
1,1-Dichloroethene			2.0
cis-1,2-Dichloroethene			2.0
trans-1,2-Dichloroethene			2.0
1,2-Dichloropropane			2.0
1,3-Dichloropropane			NT
2,2-Dichloropropane			NT
1,1-Dichloropropene			NT
cis-1,3-Dichloropropene			2.0

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
trans-1,3-Dichloropropene			2.0
Ethylbenzene			2.0
Hexachlorobutadiene			4.0
Isopropylbenzene			NT
p-Isopropyltoluene			NT
Methylene chloride			2.0
Methyl tert-butyl ether			NT
Naphthalene			NT
n-Propylbenzene			NT
Styrene			2.0
1,1,1,2-Tetrachloroethane			NT
1,1,2,2-Tetrachloroethane			2.0
Tetrachloroethene			2.0
Toluene			2.0
1,2,3-Trichlorobenzene			NT
1,2,4-Trichlorobenzene			2.0
1,1,1-Trichloroethane			2.0
1,1,2-Trichloroethane			2.0
Trichloroethene			2.0
Trichlorofluoromethane (Freon 11)			2.0
1,2,3-Trichloropropane			NT
Trichlorotrifluoroethane (Freon 113)			2.0
1,2,4-Trimethylbenzene			2.0
1,3,5-Trimethylbenzene			2.0
Vinyl chloride			2.0
o-Xylene			2.0
m,p-Xylenes			2.0

Notes:
[1]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.

N/A – Not applicable
NT – Not a target analyte

OMEGA Chemical Superfund Site OU1 Remedial Investigation/Feasibility Study Oversight

Sampling dates 2/23/05

ANALYSES

ANALYSES:

# of Samples	Matrix	Compounds/Analytes	Method	TAT (days)	Lab
4	W	VOCs (see analyte list & spec. det. limits)	524.2	21	R9L
4	W	1,4 dioxane	8270	21	R9 Lab

Lab Assignment Number **Case**

R9 Lab Case # R05S35

Data Distribution:
EDD: Tom Perina, CH@M Hill, (tperina@ch2m.com)
Elect. Report copy: Dan Jablonski, CH>@M Hill (djablon1@ch2m.com) and Tom Perina

Lab Assignments Forwarded

Supplemental Information

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
all	3	100

Company **Due Date**

Turn Around Times:

21 days

Supplemental Data Validation Information :
1.

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Dan Jablonsk
Company: CH@M Hill

Contractor Project Manager: Tom Perina
Office phone: 909-890-9857

Office Phone Number: 909-890-9857 email: tperina@ch2m.com
Mobile Phone Number: 949-302-4364
Email: djablon1@ch2m.com
Office Address: CH@M Hill
164 West Hospitality Lane, Suite 2
San Bernardino, CA 92408

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Sampling Date: 8/1/05

ANALYSES

ANALYSES:

#	Matrix	Analysis	Method	TAT	Lab	
3	soil	VOCs		5035/8260	21	R9L
3	soil gas	VOCs		TO-15	21	R9L

Data Distribution:
EDD (CH2M-Hill) and .pdf report copy: tperina@ch2m.com, ksun@ch2m.com

Supplemental Information

Lab Assignment Number **Case**

R9 Lab Case # R05S67

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
all	3	100

Turn Around Times:

21 days

Supplemental Data Validation Information :
1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Kerang Sun

Company: CH2M Hill
Office Phone Number: 714.435.6324
Mobile Phone Number: 714.697.3726
Email: ksun@ch2m.com
Office Address: CH2M Hill
Santa Ana, CA

Contractor Project Manager:
Tom Perina
CH2M-Hill
3550 Vine Street, Suite 320
Riverside, CA 92507
(951) 276-3003, ext 24
email: tperina@ch2m.com

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Omega OU-1 RSCC Form August 2005.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method, CLP SOW number, or R9 Lab SOP number)	**Matrix**	**No. of samples**	**TAT**	**Review/ Validation**
Soil VOCs 5053**	Soil	3	21 days	Tier 3
Soil gas VOCs by TO-15**	Soil Gas	3	21 days	Tier 3

*The analyses for the organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP.
Required detection limits are listed below.
** See section 6 for analyte list and needed detection levels

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

TABLE 1
Data Uses and Needs – Soils

Parameter			Laboratory Target Reporting Limit (mg/kg)[2]
Volatile Organic Compounds			
Acetone			0.010
Benzene			0.002
Bromobenzene			0.005
Bromochloromethane			0.0005
Bromodichloromethane			0.002
Bromoform			0.005
Bromomethane			0.005
n-Butylbenzene			0.005
sec-Butylbenzene			0.005
tert-Butylbenzene			0.005
Carbon tetrachloride			0.005
Chlorobenzene			0.002
Chloroethane			0.005
Chloroform			0.002
Chloromethane			0.005
2-Chlorotoluene			0.005
4-Chlorotoluene			0.005
Dibromochloromethane			0.002
1,2-Dibromo-3-chloropropane			0.005
1,2-Dibromoethane			0.002
Dibromomethane			0.002
1,2-Dichlorobenzene			0.002
1,3-Dichlorobenzene			0.002
1,4-Dichlorobenzene			0.002
Dichlorodifluoromethane (Freon 12)			0.005
1,1-Dichloroethane			0.002
1,2-Dichloroethane			0.002
1,1-Dichloroethene			0.005
cis-1,2-Dichloroethene			0.002
trans-1,2-Dichloroethene			0.002
1,2-Dichloropropane			0.002
1,3-Dichloropropane			0.002
2,2-Dichloropropane			0.002
1,1-Dichloropropene			0.002
cis-1,3-Dichloropropene			0.002

TABLE 1
Data Uses and Needs – Soils

Parameter			Laboratory Target Reporting Limit (mg/kg)[2]
trans-1,3-Dichloropropene			0.002

Table 1. Data Uses and Needs – Soils (continued)

Parameter			Laboratory Target Reporting Limit (mg/kg)[2]
Volatile Organic Compounds			
Hexachlorobutadiene			0.005
Isopropylbenzene			0.002
p-Isopropyltoluene			0.002
Methylene chloride			0.020
Methyl tert-butyl ether			0.005
Naphthalene			0.005
n-Propylbenzene			0.002
Styrene			0.002
1,1,1,2-Tetrachloroethane			0.005
1,1,2,2-Tetrachloroethane			0.002
Tetrachloroethene			0.002
Toluene			0.002
1,2,3-Trichlorobenzene			0.005
1,2,4-Trichlorobenzene			0.005
1,1,1-Trichloroethane			0.002
1,1,2-Trichloroethane			0.002
Trichloroethene			0.002
Trichlorofluoromethane (Freon 11)			0.005
1,2,3-Trichloropropane			0.010
Trichlorotrifluoroethane (Freon 113)			0.005
1,2,4-Trimethylbenzene			0.002
1,3,5-Trimethylbenzene			0.002
Vinyl chloride			0.005
o-Xylene			0.002
m,p-Xylenes			0.002

Notes:
[1]EPA Region IX Preliminary Remediation Goals (PRGs) for residential soils.
[2]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.
— No Standard

TABLE 2
Data Uses and Needs – Soil Gas

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
Volatile Organic Compounds			
Acetone			10
Benzene			2.0
Bromobenzene			NT
Bromochloromethane			NT
Bromodichloromethane			2.0
Bromoform			2.0
Bromomethane			2.0
n-Butylbenzene			NT
sec-Butylbenzene			NT
tert-Butylbenzene			NT
Carbon tetrachloride			2.0
Chlorobenzene			2.0
Chloroethane			4.0
Chloroform			2.0
Chloromethane			4.0
2-Chlorotoluene			NT
4-Chlorotoluene			NT
Dibromochloromethane			2.0
1,2-Dibromo-3-chloropropane			NT
1,2-Dibromoethane			2.0
Dibromomethane			NT
1,2-Dichlorobenzene			2.0
1,3-Dichlorobenzene			NT
1,4-Dichlorobenzene			2.0
Dichlorodifluoromethane (Freon 12)			2.0
1,1-Dichloroethane			2.0
1,2-Dichloroethane			2.0
1,1-Dichloroethene			2.0
cis-1,2-Dichloroethene			2.0
trans-1,2-Dichloroethene			2.0
1,2-Dichloropropane			2.0
1,3-Dichloropropane			NT
2,2-Dichloropropane			NT
1,1-Dichloropropene			NT

Table 2. Data Uses and Needs – Soil Gas (continued)

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
Volatile Organic Compounds			
cis-1,3-Dichloropropene			2.0
trans-1,3-Dichloropropene			2.0
Ethylbenzene			2.0
Hexachlorobutadiene			4.0
Isopropylbenzene			NT
p-Isopropyltoluene			NT
Methylene chloride			2.0
Methyl tert-butyl ether			NT
Naphthalene			NT
n-Propylbenzene			NT
Styrene			2.0
1,1,1,2-Tetrachloroethane			NT
1,1,2,2-Tetrachloroethane			2.0
Tetrachloroethene			2.0
Toluene			2.0
1,2,3-Trichlorobenzene			NT
1,2,4-Trichlorobenzene			2.0
1,1,1-Trichloroethane			2.0
1,1,2-Trichloroethane			2.0
Trichloroethene			2.0
Trichlorofluoromethane (Freon 11)			2.0
1,2,3-Trichloropropane			NT
Trichlorotrifluoroethane (Freon 113)			2.0
1,2,4-Trimethylbenzene			2.0
1,3,5-Trimethylbenzene			2.0
Vinyl chloride			2.0
o-Xylene			2.0
m,p-Xylenes			2.0

Notes:
[1]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.
N/A – Not applicable
NT – Not a target analyte

Sampling Dates: 08/22/05 - 08/26/05:

ANALYSES

ANALYSES:

Samples	Matrix	Analyses	Method	Lab
8	air	VOCs	TO-15	R9L

TAT

21 days

Data Distribution:

EDD (CH2M-Hill format): tperina@ch2m.com, djablon1@ch2m.com
.pdf report copy: tperina@ch2m.com

Lab Assignment Number **Case**

R9 Lab Case # R05S75

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
all	3	100%

Turn Around Times:

Std

Supplemental Data Validation Information :

1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Kerang Sun
Company: CH2M-Hill
Office Phone Number: 714-435-6324

Project Manager: Tom Perina

951.276.3003 ext. 24

Mobile Phone Number:
Email: kerang.sun@ch2m.com
Office Address: CH2M-Hill
3550 Vine Street, Suite 320
Riverside, CA 92507

EVENT NOTES

EVENT NOTES:

RSCC FORM

Omega OU-1 RSCC Form August 2005 Indoor Air.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method, CLP SOW number, or R9 Lab SOP number)	Matrix	No. of samples	TAT	Review/ Validation
VOCs (EPA Region 9 Lab Procedure [a, b]), see list of analytes and detection limits below	Indoor Air	8 (tentative)	21 days	Tier 3

a) The analyses for the organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP.

b) See section 6 for analyte list and needed detection levels.

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
Volatile Organic Compounds			
Acetone			10
Benzene			2.0
Bromobenzene			NT
Bromochloromethane			NT
Bromodichloromethane			2.0
Bromoform			2.0
Bromomethane			2.0
n-Butylbenzene			NT
sec-Butylbenzene			NT
tert-Butylbenzene			NT
Carbon tetrachloride			2.0
Chlorobenzene			2.0
Chloroethane			4.0
Chloroform			2.0
Chloromethane			4.0
2-Chlorotoluene			NT
4-Chlorotoluene			NT
Dibromochloromethane			2.0
1,2-Dibromo-3-chloropropane			NT
1,2-Dibromoethane			2.0
Dibromomethane			NT
1,2-Dichlorobenzene			2.0
1,3-Dichlorobenzene			NT
1,4-Dichlorobenzene			2.0
Dichlorodifluoromethane (Freon 12)			2.0
1,1-Dichloroethane			2.0
1,2-Dichloroethane			2.0
1,1-Dichloroethene			2.0
cis-1,2-Dichloroethene			2.0
trans-1,2-Dichloroethene			2.0
1,2-Dichloropropane			2.0
1,3-Dichloropropane			NT
2,2-Dichloropropane			NT
1,1-Dichloropropene			NT
cis-1,3-Dichloropropene			2.0

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
trans-1,3-Dichloropropene			2.0
Ethylbenzene			2.0
Hexachlorobutadiene			4.0
Isopropylbenzene			NT
p-Isopropyltoluene			NT
Methylene chloride			2.0
Methyl tert-butyl ether			NT
Naphthalene			NT
n-Propylbenzene			NT
Styrene			2.0
1,1,1,2-Tetrachloroethane			NT
1,1,2,2-Tetrachloroethane			2.0
Tetrachloroethene			2.0
Toluene			2.0
1,2,3-Trichlorobenzene			NT
1,2,4-Trichlorobenzene			2.0
1,1,1-Trichloroethane			2.0
1,1,2-Trichloroethane			2.0
Trichloroethene			2.0
Trichlorofluoromethane (Freon 11)			2.0
1,2,3-Trichloropropane			NT
Trichlorotrifluoroethane (Freon 113)			2.0
1,2,4-Trimethylbenzene			2.0
1,3,5-Trimethylbenzene			2.0
Vinyl chloride			2.0
o-Xylene			2.0
m,p-Xylenes			2.0

Notes:
[1]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.

N/A – Not applicable
NT – Not a target analyte

TECHNICAL DIRECTION NO. 00905072

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU2 ACE**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp

TO NUMBER: 009 68-W-01-028 ICF Consulting **DATE:** 1-5-06

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Data Package & Project Information

Data packages will be sent to Doug Lindelof the week of 1-2-06. ESAT will determine the number of samples upon receipt of the packages. ACE Sub-contract laboratory data; TRLs if any to TOPO.

SDG	Laboratory	Analysis	#Samples	Tier	EPA Site Manager	Mail Code
044466 044485 044539 045575 045594 045611 045621 045657 045709 045740	APCH	hexchrome		2	Chris Lichens, RPM	SFD-7-4
045674	APCH	hexchrome		3		
G4L01311 G4L02335 G4L04125 G4L04206 G4L07405 G4L08479 G4L09480 G4L10385	STL-Sac	COD		1A		
G4L01311 G4L02335 G4L04125 G4L04206 G4L07405 G4L08479 G4L09480	STL-Sac	NDMA 1,2,3-TCP		2		
G4L10385	STL-Sac	NDMA 1,2,3-TCP		3		

Tier 1A: review of the minimum QC to assess whether samples were analyzed according to the method. Table 1A not required and SDGs can be combined in reports if efficient.
Tier 2: Tier 3-level review minus inspection of raw data and verification of results by independent calculation. Table 1A not required and SDGs can be combined in reports if efficient.

Field QC samples: Review Request Memo.doc

Deliverable	**Due date**
[X] Tier 1A, 2 and 3 Validation Reports	2-24-06

Pkgs to ESAT: 10-6

SFUND RECORDS CTR
2097170

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Project Officer (TOPO)
Quality Assurance (QA) Program, PMD-3

FROM: Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Technical Direction Form No.: 00905072

DATE: February 22, 2006

SUBJECT: Review of Analytical Data, Tier 2

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2 ACE
Site Account No.:	09 BC LA02
CERCLIS ID No.:	CAD042245001
Case No.:	None
SDG Nos.:	044466, 044485, 044539, 045575, 045594, 045611, 045621, 045657, 045709, and 045740
Laboratory:	Applied Physics & Chemistry Laboratory (APCL)
Analysis:	Hexavalent Chromium
Samples:	38 Groundwater Samples (see Case Summary)
Collection Dates:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004
Reviewer:	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOPO for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: None
SDG No.: 045674
Site: Omega Chem OU2 ACE
Laboratory: Applied Physics & Chemistry Laboratory (APCL)
Reviewer: Stan Kott, ESAT/LDC
Date: February 22, 2006

I. CASE SUMMARY

Sample Information

SDG 044466 Samples:	OC2-MW4A-W-0-58, OC2-MW4B-W-0-59, OC2-MW4B-W-1-60, and OC2-MW4C-W-0-61
SDG 044485 Samples:	OC2-MW1B-W-0-62, OC2-MW1A-W-0-63, OC2-MW2A-W-1-64, OC2-MW6A-W-0-65, and OC2-MW5A-W-0-66
SDG 044539 Samples:	OC2-MW7A-W-0-73, OC2-MW7A-W-1-74, OC2-MW3A-W-0-75, OC2-MW10A-W-0-76, and OC2-MW11A-W-0-77
SDG 045575 Samples:	OC2-OW7-W-5-79, OC2-OW4B-W-0-80, and OC2-OW4A-W-0-81
SDG 045594 Samples:	OC2-OW6-W-0-82, OC2-OW1B-W-0-83, and OC2-OW3-W-0-85
SDG 045611 Samples:	OC2-OW8B-W-0-88, OC2-OW5-W-0-86, OC2-OW5-W-1-87, and OC2-OW2-W-0-89
SDG 045621 Sample:	OC2- OW8-W-0-91
SDG 045657 Samples:	OC2-MW4A-W-0-92, OC2-MW4B-W-0-93, OC2-MW4B-W-1-94, OC2-MW4C-W-0-95, and OC2-MW5A-W-0-97
SDG 045709 Samples:	OC2-OW1A-W-0-90, OC2-MW10A-W-0-104, OC2-MW3A-W-0-105, and OC2-MW2A-W-0-106
SDG 045740 Samples:	OC2-MW8A-W-0-107, OC2-MW8B-W-0-108, OC2-MW8C-W-0-109, and OC2-MW8D-W-0-110
Concentration and Matrix:	Low Concentration Groundwater
Analysis:	Hexavalent Chromium
SOW:	EPA Method 218.6
Collection Date:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004
Sample Receipt Date:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004
Preparation Date:	September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004

Analysis Date: September 13, 14, 16, November 30, December 1, 2, 3, 6, 8, and 9, 2004

Field QC

Field Blanks (FB): Not Provided
Equipment Blanks (EB): Not Provided
Background Samples (BG): Not Provided
Field Duplicates (D1): OC2-MW4B-W-0-59 and OC2-MW4B-W-1-60
Field Duplicates (D2): OC2-MW7A-W-0-73 and OC2-MW7A-W-1-74
Field Duplicates (D3): OC2-OW5-W-0-86 and OC2-OW5-W-1-89
Field Duplicates (D4): OC2-MW4B-W-0-93 and OC2-MW4B-W-1-94

Laboratory QC

Method Blanks (MB): MB
Associated Samples: Samples listed above
Matrix Spike (MS): OC2-MW4B-W-1-60MS, OC2-MW2A-W-0-64MS, OC2-MW7A-W-0-73MS, OC2-OW7-W-5-79MS, OC2-OW6-W-0-82MS, OC2-OW5-W-1-87MS, OC2- OC2-MW4B-W-1-94MS, and OC2-MW8B-W-0-108MS
Duplicates (D): Laboratory Control Sample (LCS)/ LCS Duplicate (LCSD)

Analysis: Hexavalent Chromium

Analyte	Sample Preparation Date	Analysis Date
Hexavalent Chromium	September 13, 14, 16, 2004 November 30, 2004 December 1, 2, 3, 6, 8, 9, 2004	September 13, 14, 16, 2004 November 30, 2004 December 1, 2, 3, 6, 8, 9, 2004

Sampling Issues

The Chain of Custody (COC) record forms for all SDGs, except 045575, did not specify a sample to be used for laboratory quality control (QC). As a result, the laboratory selected a sample for QC analysis. The effect on data quality is not known.

Additional Comments

As directed by the EPA TOPO, a Tier 2 data review was performed (Tier 3-level review minus inspection of raw data and verification of results by independent calculation. Table 1A is not required).

The analytical method does not require analysis of a practical quantitation limit (PQL) standard to confirm linearity of the calibration curve at the 1 µg/L PQL. Since the laboratory analyzed a 0.2 µg/L standard that is near the PQL as part of the instrument calibration, this is not expected to have a significantly adverse effect on data quality for hexavalent chromium for samples less than or equal to two times the PQL.

This report was prepared in accordance with the following documents:

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*; and

- *USEPA Method 218.6, Determination of Dissolved Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents by Ion Chromatography*, Revision 3.2, April 1991.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	No	A
	a. Initial		
	b. Initial and Continuing Calibration Verification		
4.	Blanks	Yes	
5.	Laboratory Control Sample (LCS)	Yes	
6.	Duplicate Sample Analysis	Yes	
7.	Matrix Spike Sample Analysis	Yes	
8.	Field Duplicate Sample Analysis	No	B
9.	Sample Quantitation	Yes	
10.	Overall Assessment	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following results are estimated because initial calibration verification (ICV) and continuing calibration verification (CCV) standard results are outside method QC limits.

- Hexavalent chromium in samples OC2-MW7A-W-0-73, OC2-MW7A-W-1-74, OC2-MW10A-W-0-76, and OC2-MW11A-W-0-77 (SDG 044539)

The ICV and CCV recovery results for hexavalent chromium do not meet the 95-105% criterion for accuracy. The recovery for hexavalent chromium is presented below and is based on an ideal recovery of 100%.

Analyte	% Recovery
Hexavalent Chromium (ICV)	108
Hexavalent Chromium (CCV)	108

Results greater than or equal to the practical quantitation limit (PQL) are considered quantitatively uncertain. The results reported for hexavalent chromium in the samples listed above may be biased high.

The inorganic method indicates that the laboratory verify that the instrument is properly calibrated on a continuing basis. Laboratory reagent blank (LRB) and laboratory performance check standards (LPC) are analyzed after every 10 analytical samples to determine the validity of the calibration.

B. A relative percent difference (RPD) of 51 was obtained for hexavalent chromium in the analysis of field duplicate pair samples OC2-OW5-W-0-86 and OC2-OW5-W-1-87 (SDG 045611). Since sampling variability is included in the measurement, field duplicate results are expected to vary more than laboratory duplicates which have a ±25 RPD criterion for precision. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, high levels of solids in the sample, or poor sampling or laboratory technique.

SFUND RECORDS CTR
2097171

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone (510) 412-2300 Fax (510) 412-2304

MEMORANDUM

TO Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH Rose Fong, ESAT Task Order Project Officer (TOPO)
Quality Assurance (QA) Program, PMD-3

FROM Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No 68-W-01-028
Technical Direction Form No.. 00905072

DATE. February 22, 2006

SUBJECT Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data

Site	Omega Chem OU2 ACE
Site Account No	09 BC LA02
CERCLIS ID No	CAD042245001
Case No	None
SDG No	045674
Laboratory	Applied Physics & Chemistry Laboratories (APCL)
Analysis	Hexavalent Chromium
Samples	6 Groundwater Samples (see Case Summary)
Collection Date	December 7, 2004
Reviewer	Stan Kott, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOPO for the ESAT contract, whose signature appears above

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812

Attachment

SAMPLING ISSUES [ ] Yes [X] No

Data Validation Report

Case No None
SDG No 045674
Site Omega Chem OU2 ACE
Laboratory Applied Physics & Chemistry Laboratory (APCL)
Reviewer Stan Kott, ESAT/LDC
Date February 22, 2006

I. CASE SUMMARY

Sample Information

Samples	OC2-MW1A-W-0-98, OC2-MW1B-W-0-99, OC2-MW6-W-0-100, OC2-MW9B-W-0-101, OC2-MW7A-W-0-102, and OC2-MW7A -W-1-103
Concentration and Matrix	Low Concentration Groundwater
Analysis.	Hexavalent Chromium
SOW	EPA Method 218 6
Collection Date·	December 7, 2004
Sample Receipt Date	December 7, 2004
Preparation Date	December 7, 2004
Analysis Date	December 7, 2004

Field QC

Field Blanks (FB).	Not Provided
Equipment Blanks (EB).	Not Provided
Background Samples (BG)	Not Provided
Field Duplicates (D1)	OC2-MW7A-W-0-102 and OC2-MW7A-W-1-103

Laboratory QC

Method Blank (MB)	MB
Associated Samples	Samples listed above
Matrix Spike (MS)	OC2-MW9B-W-0-101MS
Duplicates (D)	Laboratory Control Sample (LCS) and LCS Duplicate (LCSD)
Analysis	Hexavalent Chromium

Analyte	Sample Preparation Date	Analysis Date
Hexavalent Chromium	December 7, 2004	December 7, 2004

Sampling Issues

None

Additional Comments

The analytical method does not require analysis of a practical quantitation limit (PQL) standard to confirm linearity of the calibration curve at the 1 µg/L PQL Since the laboratory analyzed a 0 2 µg/L standard that is near the PQL as part of the instrument calibration, this is not expected to have a significantly adverse effect on data quality for hexavalent chromium in OC2MW9B-W-0-101, OC2MW7A-W-0-102, and OC2MW7A-W-1-103

Standards preparation data were not included in the data package and could not be reviewed No adverse effect on data quality is expected

Analytical results are listed in Table 1A Definitions of data qualifiers are listed in Table 1B

This report was prepared in accordance with the following documents

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*, and
- *USEPA Method 218 6, Determination of Dissolved Hexavalent Chromium in Drinking Water, Groundwater, and Industrial Wastewater Effluents by Ion Chromatography*, Revision 3 2, April 1991

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters

	Parameter	Acceptable	Comment
1	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3	Calibration	Yes	
	a Initial		
	b Initial and Continuing Calibration Verification		
4	Blanks	Yes	
5	Laboratory Control Sample (LCS)	Yes	
6	Duplicate Sample Analysis	Yes	
7	Matrix Spike Sample Analysis	Yes	
8.	Field Duplicate Sample Analysis	Yes	
9	Sample Quantitation	Yes	
10	Overall Assessment	Yes	

N/A = Not Applicable

III. OVERALL ASSESSMENT OF DATA

All of the method requirements specified in EPA Method 218 6 have been met Reported results for hexavalent chromium in all of the samples of this SDG were correctly calculated.

SFUND RECORDS CTR
2097174

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone (510) 412-2300 Fax (510) 412-2304

MEMORANDUM

TO Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH Rose Fong, ESAT Task Order Project Officer (TOPO) RF
Quality Assurance (QA) Program, PMD-3

FROM. Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No : 68-W-01-028
Technical Direction Form No.. 00905072

DATE February 24, 2006

SUBJECT Tier 1A Review of Analytical Data Cover Memo for Omega Chem OU2 ACE site, Case None, SDGs G4L010311, G4L020335, G4L040125, G4L040206, G4L070405, G4L080479, G4L090480, and G4L100385

Severn Trent Laboratories-Sacramento analyzed 29 groundwater samples for chemical oxygen demand (COD) by EPA Method 410 4.

A forms-only evaluation of the data packages was performed to identify any key analytical issues/deficiencies affecting data quality. This evaluation approach is employed when in-depth data review is not required as indicated by the data user For areas of concern see lettered and additional comments

The evaluation includes· a review of the data package for completeness, a review of the chain of custody (COC) forms (against laboratory reported information, for signatures, for sample condition upon laboratory receipt and for sample preservation), a review of holding times, a review of quality control (QC) summaries, a review of blanks for contamination, a random check of reported results against raw data, and a random check of raw data for interference problems or system control problems (e g baseline anomalies, baseline drifts, etc)

The following data quality issue should be noted '

A. Results between the method detection limit (MDL) and the reporting limit (RL) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection COD results for the following samples are greater than the MDL but less than the RL and are estimated. OC2-OW6-W-0-82 and OC2-OW3-W-0-85 (SDG G4L020335), OC2-OW5-W-0-86 and OC2-OW2-W-0-89 (SDG G4L040125), OC2-MW4B-W-0-93, OC2-MW4B-W-1-94, and OC2-MW4C-W-0-95 (SDG G4L070405), OC2-MW1A-W-0-98,

OC2-MW1B-W-0-99, OC2-MW7A-W-0-102, and OC2-MW7A-W-1-103 (SDG G4L080479), OC2-MW10A-W-0-104, OC2-MW3A-W-0-105, and OC2-MW2A-W-0-106 (SDG G4L090480), and OC2-MW8A-W-0-107, OC2-MW8B-W-0-108, and OC2-MW8C-W-0-109 (SDG G4L100385)

Additional Comments

1 The sampler specified OC2-MW6-W-0-100 (SDG G4L080479) as the laboratory QC sample on the COC record form. The laboratory did not use this sample for laboratory QC The effect on data quality is not known

2 The COC record forms for all SDGs, except G4L010311 and G4L080479, did not specify a sample to be used for laboratory QC As a result, the laboratory selected a sample for QC analysis The effect on data quality is not known

A Tier 1A Table 1A was not requested

This report has been reviewed by the EPA TOPO for the ESAT contract, whose signature appears above

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

SFUND RECORDS CTR
2097172

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone (510) 412-2300 Fax (510) 412-2304

MEMORANDUM

TO Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH. Rose Fong, ESAT Task Order Project Officer (TOPO)
Quality Assurance (QA) Program, PMD-3

FROM· Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.. 68-W-01-028
Technical Direction Form No. 00905072

DATE. February 27, 2006

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data

Site	Omega Chem OU2 ACE
Site Account No	09 BC LA02
CERCLIS ID No :	CAD042245001
Case No	Not Provided
SDG No.	G4L100385
Laboratory	STL Sacramento
Analysis	N-Nitrosodimethylamine and 1,2,3-Trichloropropane
Samples	5 Water Samples (see Case Summary)
Collection Date	December 9, 2004
Reviewer	Nanny Estrada, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA TOPO for the ESAT contract, whose signature appears above

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812

Attachment

SAMPLING ISSUES [ ] Yes [X] No

00905072-6239/-/G4L100385-DT

Data Validation Report

Case No.. Not Provided
SDG No G4L100385
Site Omega Chem OU2 ACE
Laboratory: STL Sacramento
Reviewer Nanny Estrada, ESAT/LDC
Date. February 27, 2006

I. CASE SUMMARY

Sample Information

Samples·	OC2-MW8A-W-0-107, OC2-MW8B-W-0-108, OC2-MW8C-W-0-109, OC2-MW8D-W-0-110, and OC2-00-W-2-111
Concentration and Matrix·	Low Concentration Water
Analysis	N-Nitrosodimethylamine (NDMA) and 1,2,3-Trichloropropane
Method.	USEPA Method 1625, Semivolatile Organic Compounds by Isotope Dilution GCMS
Collection Date·	December 9, 2004
Sample Receipt Date	December 10, 2004
Extraction Date.	December 15 and 22, 2004
Analysis Date	December 17 and 29, 2004

Field QC

Field Blanks (FB)	Not Provided
Equipment Blanks (EB)	Not Provided
Background Samples (BG)	Not Provided
Field Duplicates (D1)·	Not Provided

Laboratory QC

Method Blanks & Associated Samples.

G4L150000-473.	All samples
G4L220000-371	NDMA for OC2-00-W-2-111

Tables

1A Analytical Results with Qualifications
1B Data Qualifier Definitions for Organic Data Review

Sampling Issues

None

Additional Comments

Although NDMA was found in the laboratory method blanks (3 3 ng/L and 18 ng/L), no data are qualified since NDMA was not found in the samples NDMA was detected above the reporting limit in the initial analysis of sample OC2-00-W-2-111 The sample was re-extracted outside of the 7-day extraction holding time specified in EPA Method 1625 (see Comment A) No NDMA was found above the reporting limit in the re-analysis of sample OC2-00-W-2-111RX.

Method specific quality control (QC) limits are used to evaluate the quality of data For QC where the method does not specify limits, the laboratory QC limits are used

This report was prepared in accordance with the following documents.

- USEPA Office of Water, *Method 1625C Semivolatile Organic Compounds by Isotope Dilution GCMS*, June 1989,
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*, and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1	Holding Time/Preservation	No	A
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	Yes	
4	Continuing Calibration	Yes	
5	Laboratory Blanks	Yes	
6	Field Blanks	N/A	
7	Matrix Spike/Matrix Spike Duplicates	N/A	
8	Laboratory Control Samples/Duplicates	No	C
9	Internal Standards/Surrogates	No	B
10.	Compound Identification	Yes	
11.	Compound Quantitation	Yes	
12	System Performance	Yes	
13.	Field Duplicate Sample Analysis	N/A	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A The result for the following analyte is qualified as estimated due to a holding time problem and is flagged "J" in Table 1A.

- N-Nitrosodimethylamine (NDMA) in sample OC2-00-W-2-111

The sample was collected on December 9, 2004 and extracted on December 22, 2004, which exceeded the 7-day method-specific holding time by 6 days Since the results are nondetected, false negatives may exist

B Results for the following analyte are qualified as estimated due to internal standard/surrogate recovery outside QC limits and are flagged "J" in Table 1A

{NDMA-d6}

- NDMA in samples OC2-MW8A-W-0-107, OC2-MW8B-W-0-108, OC2-MW8C-W-0-109, and OC2-MW8D-W-0-110 and method blank G4L150000-473

Internal standard/surrogate recoveries fell below the QC limits as shown below

Sample	Internal Standard	% Recovery	QC Limits
OC2-MW8A-W-0-107	NDMA-d6	21	25 - 150
OC2-MW8B-W-0-108	NDMA-d6	19	25 - 150
OC2-MW8C-W-0-109	NDMA-d6	16	25 - 150
OC2-MW8D-W-0-110	NDMA-d6	20	25 - 150
G4L150000-473	NDMA-d6	17	25 - 150

Since sample results are nondetected, false negatives may exist

C The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) results for ongoing precision and recovery (OPR) samples G05QJ1AC-LCS and G05QJ1AD-LCSD did not meet the laboratory criteria for precision Relative percent differences (RPDs) are presented below

Analyte	RPD	QC Limits RPD
NDMA	28	0 - 20
1,2,3-TCP	23	0 - 20

Results obtained may indicate poor laboratory technique which may interfere with accurate analysis The effect on the data quality is not known

SFUND RECORDS CTR
2097173

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone (510) 412-2300 Fax (510) 412-2304

MEMORANDUM

TO Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH Rose Fong, ESAT Task Order Project Officer (TOPO) RF
Quality Assurance (QA) Program, PMD-3

FROM Doug Lindelof, Data Review Task Manager
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No 68-W-01-028
Technical Direction Form No · 00905072

DATE March 3, 2006

SUBJECT Review of Analytical Data, **Tier 2**

Attached are comments resulting from ESAT Region 9 review of the following analytical data

Site	Omega Chem OU2 ACE
Site Account No ·	09 BC LA02
CERCLIS ID No	CAD042245001
Case No	Not Provided
SDG Nos	G4L010311, G4L020335, G4L040125, G4L040206, G4L070405, G4L080479, and G4L090480
Laboratory	STL Sacramento
Analysis	N-Nitrosodimethylamine and 1,2,3-Trichloropropane
Samples	25 Water Samples (see Case Summary)
Collection Date.	December 9, 2004
Reviewer	Santiago Lee, ESAT/Laboratory Data Consultants (LDC)

This report has been reviewed by the EPA TOPO for the ESAT contract, whose signature appears above

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812

Attachment

SAMPLING ISSUES [ ] Yes [X] No

00905072-6272/-/G4L010311+-DT

Data Validation Report – **Tier 2**

Case No ·	Not Provided
SDG Nos	G4L010311, G4L020335, G4L040125, G4L040206, G4L070405, G4L080479, and G4L090480
Site	Omega Chem OU2 ACE
Laboratory	STL Sacramento
Reviewer	Santiago Lee, ESAT/LDC
Date	March 3, 2006

I. CASE SUMMARY

Sample Information

Samples	SDG G4L010311 = OC2-00-W-2-78, OC2-0W7-W-5-79, OC2-MW4B-W-0-80, and OC2-MW4A-W-0-81 SDG G4L020335 = OC2-OW6-W-0-82, OC2-0W1A-W-0-83, OC2-MW1B-W-3-84, and OC2-MW3-W-0-85 SDG G4L040125 = OC2-0W5-W-0-86, OC2-0W5-W-1-87, OC2-MW8B-W-0-88, and OC2-MW2-W-0-89 SDG G4L040206 = OC2-0W8-W-0-91 SDG G4L070405 = OC2-MW4A-W-0-92, OC2-MW4B-W-0-93, OC2-MW4B-W-1-94, OC2-MW4C-W-0-95, OC2-00-W-2-96, and OC2-MW5A-W-0-97 SDG G4L080479 = OC2-MW4A-W-0-98, OC2-MW1B-W-0-99, OC2-MW6-W-0-100, OC2-MW9B-W-0-101, OC2-MW7A-W-0-102, and OC2-MW7A-W-1-103 SDG G4L090480 = OC2-MW10A-W-0-104, OC2-MW3A-W-0-105, and OC2-MW2A-W-1-106
Concentration and Matrix	Low Concentration Water
Analysis	N-Nitrosodimethylamine (NDMA) and 1,2,3-Trichloropropane (1,2,3-TCP)
Method	USEPA Method 1625, Semivolatile Organic Compounds by Isotope Dilution GCMS
Collection Date	November 30, 2004 through December 8, 2004
Sample Receipt Date.	December 1 through 9, 2004
Extraction Date.	December 3, 7, 9, 13, and 22, 2004
Analysis Date	December 4, 8, 9, 16, 17, and 29, 2004

Field QC

Field Blanks (FB).	Not Provided
Equipment Blanks (EB)	Not Provided
Background Samples (BG)	Not Provided
Field Duplicates (D1)	Not Provided

Laboratory QC

Method Blanks & Associated Samples

G4L030000-287	OC2-00-W-2-78, OC2-OW7-W-5-79, OC2-OW4B-W-0-80, and OC2-OW4A-W-0-81, OC2-OW6-W-0-82, OC2-OW1A-W-0-83, OC2-OW1B-W-3-84, and OC2-OW3-W-0-85
G4L070000-381	OC2-OW5-W-0-86, OC2-OW5-W-1-87, OC2-OW8B-W-0-88, and OC2-OW2-W-0-89, OC2-OW8-W-0-91
G4L090000-214	OC2-MW4A-W-0-92, OC2-MW4B-W-0-93, OC2-MW4B-W-1-94, OC2-MW4C-W-0-95, OC2-00-W-2-

	96, and OC2-MW5A-W-0-97
G41130000-402	1,2,3-TCP for OC2-MW4A-W-0-98, OC2-MW1B-W-0-99, OC2-MW6-W-0-100, OC2-MW9B-W-0-101, OC2-MW7A-W-0-102, and OC2-MW7A-W-1-103, OC2-MW10A-W-0-104, OC2-MW3A-W-0-105, and OC2-MW2A-W-1-106
G41220000-371	NDMA for OC2-MW4A-W-0-98, OC2-MW1B-W-0-99, OC2-MW6-W-0-100, OC2-MW9B-W-0-101, OC2-MW7A-W-0-102, and OC2-MW7A-W-1-103, OC2-MW10A-W-0-104, OC2-MW3A-W-0-105, and OC2-MW2A-W-1-106

Tables

1B· Data Qualifier Definitions for Organic Data Review

Sampling Issues

None

Additional Comments

As directed by the EPA TOPO, a Tier 2 review was performed (Tier 3-level review minus inspection of raw data and verification of results by independent calculation). Table 1A is not required.

Method specific quality control (QC) limits are used to evaluate the quality of data For QC where the method does not specify limits, the laboratory QC limits are used

This report was prepared in accordance with the following documents

- USEPA Office of Water, *Method 1625C Semivolatile Organic Compounds by Isotope Dilution GCMS*, June 1989,
- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*, and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters

	Parameter	Acceptable	Comment
1	Holding Time/Preservation	No	A
2	GC/MS Tune/GC Performance	Yes	
3	Initial Calibration	Yes	
4	Continuing Calibration	Yes	
5	Laboratory Blanks	No	B
6	Field Blanks	N/A	
7	Matrix Spike/Matrix Spike Duplicates	N/A	
8	Laboratory Control Samples/Duplicates	Yes	
9	Internal Standards/Surrogates	No	C
10	Compound Identification	Yes	
11	Compound Quantitation	Yes	
12.	System Performance	Yes	
13	Field Duplicate Sample Analysis	N/A	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A Results for the following analyte are qualified as estimated (J) due to holding time problems

- NDMA in samples OC2-MW4A-W-0-98, OC2-MW1B-W-0-99, OC2-MW6-W-0-100, OC2-MW9B-W-0-101, OC2-MW7A-W-0-102, OC2-MW7A-W-1-103, OC2-MW10A-W-0-104, OC2-MW3A-W-0-105, and OC2-MW2A-W-1-106

The samples listed above were collected on December 7 and 8, 2004 and extracted on December 22, 2004, which exceeded the 7-day method-specific holding time Since the results are nondetected, false negatives may exist

B The following result is qualified as nondetected and estimated (U,J) due to a method blank contamination

- NDMA in sample OC2-MW2A-W-0-106

NDMA was found in method blank G4L220000-371 at a concentration of 18 ng/L The result for sample OC2-MW2A-W-0-106 (4 3 ug/L) is considered nondetected and estimated (U,J) and the quantitation limit has been raised according to blank qualification rules presented below

No positive results are reported unless the concentration of the compound in the sample exceeds 5 times the amount in the associated blank If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result and

reported as nondetected. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL

A laboratory method blank is laboratory reagent water or baked sand analyzed with all reagents, deuterated monitoring compounds, and internal standards and carried through the same sample preparation and analytical procedures as the field samples The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis

C. Results for the following analyte are qualified as estimated (J) due to internal standard/surrogate recovery outside QC limits.

- NDMA in samples OC2-OW4B-W-0-80, OC2-OW4A-W-0-81, OC2-OW6-W-0-82, OC2-OW1A-W-0-83, OC2-OW1B-W-3-84, OC2-OW3-W-0-85, OC2-OW5-W-0-86, OC2-OW5-W-1-87, OC2-OW8B-W-0-88, OC2-OW2-W-0-89, OC2-OW8-W-0-91, OC2-MW4A-W-0-92, OC2-MW4B-W-0-93, OC2-MW4B-W-1-94, OC2-MW4C-W-0-95, OC2-00-W-2-96, OC2-MW5A-W-0-97, and OC2-MW3A-W-0-105 and method blanks G4L030000-287, G4L070000-381, and G4L090000-214

Internal standard/surrogate recoveries fell below the QC limits as shown below

Sample	Internal Standard	% Recovery	QC Limits
OC2-OW4B-W-0-80	NDMA-d6	20	25 - 150
OC2-OW4A-W-0-81	NDMA-d6	7	25 - 150
OC2-OW6-W-0-82	NDMA-d6	18	25 - 150
OC2-OW1B-W-0-83	NDMA-d6	20	25 - 150
OC2-OW1B-W-3-84	NDMA-d6	17	25 - 150
OC2-OW3-W-0-85	NDMA-d6	16	25 - 150
OC2-OW5-W-0-86	NDMA-d6	22	25 - 150
OC2-OW5-W-1-87	NDMA-d6	18	25 – 150
OC2-OW8B-W-0-88	NDMA-d6	21	25 - 150
OC2-OW2-W-0-89	NDMA-d6	24	25 - 150
OC2-OW8-W-0-91	NDMA-d6	23	25 - 150
OC2-MW4A-W-0-92	NDMA-d6	15	25 - 150
OC2-MW4B-W-0-93	NDMA-d6	15	25 - 150
OC2-MW4B-W-1-94	NDMA-d6	14	25 - 150
OC2-MW4C-W-0-95	NDMA-d6	18	25 - 150
OC2-00-W-2-96	NDMA-d6	14	25 - 150
OC2-MW4A-W-0-97	NDMA-d6	20	25 - 150
OC2-MW3A-W-0-105	NDMA-d6	11	25 - 150
G4L030000-287	NDMA-d6	3.3	25 - 150
G4l070000-381	NDMA-d6	21	25 - 150
G4l090000-214	NDMA-d6	15	25 - 150

Results for the affected analytes are considered quantitatively questionable Where sample results are nondetected, false negatives may exist.

TABLE 1B

DATA QUALIFIER DEFINITIONS FOR ORGANIC DATA REVIEW

The definitions of the following qualifiers are prepared according to the document, "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review," October 1999.

U The analyte was analyzed for but was not detected above the reported sample quantitation limit

L Indicates results which fall below the Contract Required Quantitation Limit Results are estimated and are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of detection

J The analyte was positively identified, the associated numerical value is the approximate concentration of the analyte in the sample

NJ The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration

UJ The analyte was not detected above the reported sample quantitation limit However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample

R The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

OMEGA Chemical Superfund Site OU1 Remedial Investigation/Feasibility Study Oversight--Splits

Sampling Dates: 02/21/06:

ANALYSES

ANALYSES:

Samples	Matrix	/Analytes	Method	TAT	Lab
~~3~~ 5	W	VOCs (see analyte list/QLs)		21	R9L
~~3~~ 5	W	1,4 dioxane	8270	21	R9L

Lab Assignment Number **Case**

R9 Lab Case # R06S36

Data Distribution:

EDD: tperina@ch2m.com, ksun@ch2m.com, vtaylor1@ch2m.com

Elect. Report copy: tperina@ch2m.com, ksun@ch2m.com, vtaylor1@ch2m.com

Supplemental Information

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
all	1A	100

Company **Due Date**

Turn Around Times:

21 days

Supplemental Data Validation Information :

1.

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name:	Kerang Sun	Contractor Project Manager: Tom Perina	
Company:	CH@M Hill	Office phone:	951-276-3003, ext. 24
Office Phone Number:	714-435-6324	email:	tperina@ch2m.com
Mobile Phone Number:	714-697-3726		
Email:	ksun@ch2m.com		
Office Address:	CH@M Hill 3550 Vine Street Riverside, CA 92507		

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Mary,

please see the attached requests for analytical services for the Omega Chemical Superfund Site. Let me know if you have any questions, or feel free to contact Vikki Taylor directly with method-specific questions, etc.
Regards,

Tom Perina Omega OU-1 RSCC Form February 2006 GW rev011106.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Electronic report copy	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Kerang Sun/CH2M HILL (ksun@ch2m.com) 3. Vikki Taylor/CH2M HILL (vtaylor1@ch2m.com)
Electronic Data Deliverable (EDD) for R9 Lab Results*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Kerang Sun/CH2M HILL (ksun@ch2m.com) 3. Vikki Taylor/CH2M HILL (vtaylor1@ch2m.com)

Formatted Table

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method, CLP SOW number, or R9 Lab SOP number)	Matrix	No. of samples	TAT	Review/ Validation
VOCs (EPA 8260B)	Water	3	21 days	Tier 1A/1B
1,4-Dioxane (EPA 8270C)	Water	3	21 days	Tier 1A/1B

The analyses for the organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP.
Required detection limits are listed below.

See section 6 for analyte list and needed detection levels. There are 17 additional analytes in addition to the standard CLP SOW target compounds, indicated in bold in the attached table.

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

TABLE 1
Data Uses and Needs – Groundwater

Parameter	Laboratory Target Reporting Limit (µg/L)
EPA Method 8260B-Volatile Organic Compounds	
Acetone	10
Benzene	0.50
Bromobenzene	1.0
Bromochloromethane	1.0
Bromodichloromethane	1.0
Bromoform	1.0
Bromomethane	1.0
n-Butylbenzene	1.0
sec-Butylbenzene	0.50
tert-Butylbenzene	1.0
Carbon tetrachloride	0.50
Chlorobenzene	1.0
Chloroethane	1.0
Chloroform	1.0
Chloromethane	1.0
2-Chlorotoluene	1.0
4-Chlorotoluene	1.0
Dibromochloromethane	1.0
1,2-Dibromo-3-chloropropane	5.0
1,2-Dibromoethane	1.0
Dibromomethane	1.0
1,2-Dichlorobenzene	0.50
1,3-Dichlorobenzene	1.0
1,4-Dichlorobenzene	1.0
Dichlorodifluoromethane (Freon 12)	5.0
1,1-Dichloroethane	0.50
1,2-Dichloroethane	0.50
1,1-Dichloroethene	0.50
cis-1,2-Dichloroethene	0.50
trans-1,2-Dichloroethene	0.50
1,2-Dichloropropane	1.0
1,3-Dichloropropane	1.0
2,2-Dichloropropane	0.50
1,1-Dichloropropene	1.0
cis-1,3-Dichloropropene	0.50
trans-1,3-Dichloropropene	0.50
Ethylbenzene	1.0

TABLE 1
Data Uses and Needs – Groundwater

Parameter	Laboratory Target Reporting Limit (µg/L)
EPA Method 8260B-Volatile Organic Compounds (Continued)	
Hexachlorobutadiene	1.0
Isopropylbenzene	1.0
p-Isopropyltoluene	1.0
Methylene chloride	10
Methyl tert-butyl ether	10
Naphthalene	1.0
n-Propylbenzene	1.0
Styrene	1.0
1,1,1,2-Tetrachloroethane	1.0
1,1,2,2-Tetrachloroethane	1.0
Tetrachloroethene	0.50
Toluene	0.50
1,2,3-Trichlorobenzene	1.0
1,2,4-Trichlorobenzene	1.0
1,1,1-Trichloroethane	0.50
1,1,2-Trichloroethane	0.50
Trichloroethene	0.50
Trichlorofluoromethane (Freon 11)	0.50
1,2,3-Trichloropropane	1.0
Trichlorotrifluoroethane (Freon 113)	5.0
1,2,4-Trimethylbenzene	1.0
1,3,5-Trimethylbenzene	1.0
Vinyl chloride	0.50
o-Xylene	1.0
m,p-Xylenes	1.0
EPA Method 8270C-Emergent Compounds	
1,4-Dioxane	2.0

00901136

Author: Richard Bauer/R9/USEPA/US **Date:** 02/28/2006 04:32 PM

TECHNICAL DIRECTION FORM # 00901136

SITE ACCOUNT NO: 09 BC LA 02 **SITE NAME:** Omega Chemical OU 2

[X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp [] Brownfields [] Fed Fac.

TO NUMBER: 009 **DATE:** 2/28/06

TO TITLE: Superfund Analytical and Quality Assurance Support

EPA TOPO: R. Bauer

DESCRIPTION OF SERVICES TO BE PERFORMED:

Sample Preparation and Analysis

Case #	**Matrix**	perchlorate, 1,4-dioxane, VOCs
R06S31	water	up to 50

Instructions: Analyze up to 50 water samples for perchlorate, VOCs,and 1,4-dioxane following R9 Lab SOPs 531, 354, and 315.

Deliverables	**Due Dates**
[x] Complete Data Package	30 days from receipt of each sample
[x] Analytical Report	30 days from receipt of each sample

Comments:

Omega Chemical Superfund Site OU-2 Remedial Investigation/Feasibility Study

Sampling Dates: 03/06/06--03/16/06

ANALYSES

ANALYSES:

Samples	Matrix	Analytes	Method	Lab
50	W	VOCs + MTBE	OCL03.2R9L	
40	W	1,4 dioxane	8270	R9L
40	W	hex. chrome	218.6	USACE
40	W	NDMA	1625	USACE
50	W	1,2,3-TCP		USACE
40	W	Perchlorate	314	R9L

Data Distribution:

EDD: tperina@ch2m.com, ksun@ch2m.com, vtaylor1@ch2m.com
Elect. Report copy: tperina@ch2m.com, ksun@ch2m.com, vtaylor1@ch2m.com

Supplemental Information

* Please note list of analytes and their respective detection limits, and footnotes in the RSCC form.

Lab Assignment Number **Case**

R9 Lab Case # R06S31

Lab Assignments Forwarded

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes	Validation Tier	Percentage Level
all	tier 2	90%
all	tier 3	10%

Turn Around Times:

Company **Due Date**

std **Supplemental Data Validation Information :**	**Validation Received** **Validation Forwarded**

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Contractor PO:	Tom Perina	Phone: 951-276-3003, Ext. 24
Sampler:	Kerang Sun	
Company:	CH@M Hill	
Office Phone Number:	714-435-6324	
Mobile Phone Number:	714-697-3726	
Email:	ksun@ch2m.com	
Office Address:	CH@M Hill 3550 Vine St., Suite 320 Riverside, CA 92507	

EVENT NOTES

EVENT NOTES:

RSCC FORM

RSCC Form

Mary,

please see the attached requests for analytical services for the Omega Chemical Superfund Site. Let me know if you have any questions, or feel free to contact Vikki Taylor directly with method-specific questions, etc.
Regards,

Tom Perina Omega OU-2 RSCC Form Feb 2006 rev011106.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

REGION 9 SAMPLE COORDINATION CENTER (RSCC)
SUPERFUND ANALYTICAL REQUEST FORM

Section 1

Project Name: OMEGA Chemical Superfund Site OU2 Remedial Investigation/Feasibility Study		
Site Name: Omega Chemical OU-2	**SS ID:** BC	**OU:** 2
[X] **RI/FS/RA [ ] Enforcement [ ] PA/SI [ ] Emergency Response [ ] Fed. Facilities**		
Proposed Sampling Dates: February 22 to March 4, 2006		
EPA Project Manager: Christopher Lichens	**Mail Code:** SFD-7-4	

Section 2

Sampling Organization (if other than above): CH2M HILL	
Mailing Address: 3550 Vine Street, Suite 320 Riverside, CA 92507	
Project Manager: Tom Perina	**E-mail:** tperina@ch2m.com
Office Phone: 951.276.3003 ext. 24	**Office Fax:** 714.424.2204
Sampler: Kerang Sun **(if different from above):**	**E-mail:** ksun@ch2m.com
Office Phone: 714.435.6324	**Mobile Phone:** 714.697.3726

Section 3

Title of QA plan or addendum to existing plan under which this sampling event will occur: Quality Assurance Project Plan Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004); Field Sampling Plan for Omega Chemical Superfund Site Operable Unit 2 Remedial Investigation/Feasibility Study (CH2M HILL, 2004).

EPA Quality Assurance Office DCN (if available):

In compliance with EPA Order 5360.1, the EPA Region 9 Quality Management Plan, Section 1.1.2, states that, "An appropriate QA planning document … will be developed and approved for each environmental data collection activity prior to the initiation of data collection."

Section 4

Type of Data Deliverable	Data Distribution (include e-mail address if appropriate)
Hard copy report	1. Tom Perina/CH2M HILL 3550 Vine Street, Suite 320, Riverside, CA 92507 2. Christopher Lichens/ EPA (Lichens.Christopher@epamail.epa.gov) 75 Hawthorne Street, SF-4, San Francisco, CA 94105
Electronic report copy	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Kerang Sun/CH2M HILL (ksun@ch2m.com) 3. Vikki Taylor/CH2M HILL (vtaylor1@ch2m.com)

Electronic Data Deliverable (EDD) for R9 Lab Results*	1. Tom Perina/CH2M HILL (tperina@ch2m.com) 2. Kerang Sun/CH2M HILL (ksun@ch2m.com) 3. Vikki Taylor/CH2M HILL (vtaylor1@ch2m.com)

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method, CLP SOW number, or R9 Lab SOP number)	Matrix	No. of samples	TAT	Review/ Validation
VOCs plus MTBE (CLP SOW) (see attached target analyte list and reporting limits)	GW	23	21 days	Tier 2 90% Tier 3 10%
1,4-Dioxane (EPA 8270C)	GW	23	21 days	Tier 2 90% Tier 3 10%
NDMA (Modified EPA Method 1625)	GW	23	21 days	Tier 2 90% Tier 3 10%
1,2,3-Trichloropropane (the method and QA/QC will follow California State guidance to achieve the regulatory limit of 0.005 ug/L)	GW	23	21 days	Tier 2 90% Tier 3 10%
Perchlorate (EPA Method 314)	GW	23	21 days	Tier 2 90% Tier 3 10%
Hexavalent Chromium (EPA Method 218.6)	GW	23	21 days	Tier 2 90% Tier 3 10%

Notes:
1) Above sample numbers include 2 lab QC, 2 field duplicates, and 2 ambient blanks.
2) Trip blanks will not be included in this sampling round.
3) See below (6) for expanded analyte list

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

The analyses for the organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP. Required detection limits are listed below.

Volatile organics and emergent compounds may be analyzed by the EPA Contract Laboratory Program (CLP) Statement of Work or the equivalent EPA Regional Laboratory Standard Operating Procedures shown in Appendix B of the QAPP, depending on availability. EPA Regional Laboratory specifications or data quality indicator specifications have been provided in Appendix B of the QAPP. There are 12 volatile target analytes required in addition to the CLP target analytes. These additional analytes are indicated in the reporting limit table.

REQUIRED REPORTING LIMITS, OMEGA CHEMICAL OU2, FEBRUARY 2006

Organic Compound	CLP SOW Target Compound	Reporting Limit (ug/L)
Acetone	Y	5
Benzene	Y	0.5
Bromochloromethane	Y	0.5
Bromodichloromethane	Y	0.5
Bromoform	Y	0.5
Bromomethane	Y	0.5
n-Butylbenzene	Add	1
sec-Butylbenzene	Add	1
Carbon disulfide	Y	0.5
Carbon tetrachloride	Y	0.5
Chlorobenzene	Y	0.5
Chloroethane	Y	0.5
Chloroform	Y	0.5
Chloromethane	Y	0.5
2-Chlorotoluene	Add	1
4-Chlorotoluene	Add	1
Cyclohexane	Y	0.5
Dibromomethane	Add	1
Dibromochloromethane	Y	0.5
1,2-Dibromo-3-chloropropane (DBCP)	Y	0.5
1,2-Dibromoethane	Y	0.5
1,2-Dichlorobenzene	Y	0.5
1,3-Dichlorobenzene	Y	0.5
1,4-Dichlorobenzene	Y	0.5
Dichlorodifluoromethane	Y	0.5
1,1-Dichloroethane	Y	0.5
1,2-Dichloroethane	Y	0.5
1,1-Dichloroethylene	Y	0.5
cis-1,2-Dichloroethylene	Y	0.5
trans-1,2-Dichloroethylene	Y	0.5
Dichloromethane (Methylene Chloride)	Y	0.5

REQUIRED REPORTING LIMITS, OMEGA CHEMICAL OU2, FEBRUARY 2006 (continued)

Organic Compound	CLP SOW Target Compound	Reporting Limit (ug/L)
1,2-Dichloropropane	Y	0.5
2,2-Dichloropropane	Add	1
1,1-Dichloropropene	Add	1
1,3-Dichloropropane	Add	1
cis-1,3-Dichloropropene	Y	0.5
trans-1,3-Dichloropropene	Y	0.5
Ethylbenzene	Y	0.5
Hexachlorobutadiene	Add	1
2-Hexanone	Y	5
Isopropylbenzene (Cumene)	Y	0.5
Methyl acetate	Y	0.5
Methyl ethyl ketone	Y	5
Methyl isobutyl ketone (MIBK)	Y	5
Methylcyclohexane	Y	0.5
Napthalene	Add	1
n-Propylbenzene	Add	1
Styrene	Y	0.5
1,1,2,2-Tetrachloroethane	Y	0.5
Tetrachloroethylene (PCE)	Y	0.5
Toluene	Y	0.5
1,2,3-Trichlorobenzene	Y	0.5
1,2,4-Trichlorobenzene	Y	0.5
1,1,1-Trichloroethane (1,1,1-TCA)	Y	0.5
1,1,2-Trichloroethane	Y	0.5
Trichloroethylene (TCE)	Y	0.5
Trichlorofluoromethane	Y	0.5
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	Y	0.5
1,2,4-Trimethylbenzene	Add	1
1,3,5-Trimethylbenzene	Add	1
Vinyl chloride	Y	0.5
Xylene(s)	Y	0.5
Methyl tert-butyl ether (MTBE)	Y	0.5

REQUIRED REPORTING LIMITS, OMEGA CHEMICAL OU2, FEBRUARY 2006 (continued)

Semivolatile Organics-Emergent Compounds	**Reporting Limit (ug/L)**
1,4-Dioxane	3
N-Nitrosodimethylamine (NDMA)	0.02
1,2,3-Trichloropropane (1,2,3-TCP)	0.005
Inorganics -Emergent Compounds	
Chromium VI	5
Perchlorate	0.2

2. The sampler signature is missing on the TR/COC (see attached TR/COC, p. 5 in data package).

Additional Comments

Other than laboratory artifacts (approximate retention times of 12.2 and 13.1 minutes), a tentatively identified compound (TIC) was found in sample Y1AM2 (see attached Form 1G).

The laboratory performed manual integrations on calibrations due to incorrect auto integration. Manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Organic Analysis,* OLM04.2, May 1999; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Holding Time/Preservation	Yes	
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	Yes	
4.	Continuing Calibration	No	B
5.	Laboratory Blanks	Yes	
6.	Field Blanks	N/A	
7.	Deuterated Monitoring Compounds	Yes	
8.	Matrix Spike/Matrix Spike Duplicates	Yes	
9.	Laboratory Control Samples/Duplicates	N/A	
10.	Internal Standards	Yes	
11.	Compound Identification	Yes	
12.	Compound Quantitation	Yes	A
13.	System Performance	Yes	
14.	Field Duplicate Sample Analysis	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All detected results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. Results for the following analytes are qualified as estimated due to large percent differences (%Ds) in the continuing calibration and are flagged "J" in Table 1A.

- 4-Chloroaniline, hexachlorocyclopentadiene, and pentachlorophenol in samples Y1AM0, Y1AM1, and Y1AM2 and method blank SBLK7E

%Ds of -32.9%, -27.2%, and -32.0% were reported for 4-chloroaniline, hexachlorocyclopentadiene, and pentachlorophenol, respectively, in the continuing calibration. These values exceed the ±25.0% validation criterion.

The continuing calibration checks the instrument performance daily and produces the relative response factors (RRFs) for target analytes that are used for quantitation.

2. The sampler signature is missing on the TR/COC (see attached TR/COC, p. 5 in data package).

Additional Comments

Manual integrations were performed on calibrations and samples due to incorrect auto integration. Manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 902, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Pesticide/PCB Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work for Organics Analysis,* OLM04.2, May 1999; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Holding Time/Preservation	Yes	
2.	GC Performance	Yes	
3.	Initial Calibration	No	A
4.	Continuing Calibration	Yes	
5.	Laboratory Blanks	Yes	
6.	Field Blanks	N/A	
7.	Surrogates	Yes	
8.	Matrix Spike/Matrix Spike Duplicates	No	B
9.	Laboratory Control Samples/Duplicates	N/A	
10.	GPC Performance	Yes	
11.	Compound Identification	Yes	
12.	Compound Quantitation	Yes	
13.	System Performance	Yes	
14.	Field Duplicate Sample Analysis	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. Results for the following analyte are qualified as estimated due to large percent relative standard deviations (%RSDs) in the initial calibration and are flagged "J" in Table 1A.

- delta-BHC in samples Y1AM0, Y1AM1, and Y1AM2 and method blank PBLK7S

%RSDs of 23.3% and 29.2% were reported for delta-BHC in the initial calibration on GC columns RTX-PEST and RTX-PEST2, respectively. These values exceed the ≤20% validation criterion.

%RSDs exceeding the ≤20% validation criterion were also reported for alpha-BHC (24.9%) and gamma-BHC (21.6%) on the RTX-PEST2 column. Data qualification is not warranted since %RSDs for the other column are within validation criterion and alpha-BHC and gamma-BHC are not detected in the samples.

The initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical sequence and of producing a linear calibration curve.

B. The MS/MSD relative percent differences (RPDs) in QC samples Y1AM0MS and Y1AM0MSD did not meet the criteria for precision specified in the SOW (see attached Form 3F, p. 199 in data package). The RPDs exceeded the QC limits for all analytes spiked.

Results may indicate poor laboratory technique, sample nonhomogeneity, or matrix effects which may interfere with analysis. The effect on data quality is not known.

Matrix spike sample analysis provides information about the effect of the sample matrix on sample preparation and analysis.

2. The TR/COC record form did not specify a sample to be used for laboratory quality control (QC). The laboratory selected sample MY1AM2 for QC analysis. The effect on data quality is not known.

3. The TR/COC record form indicates ICP-MS analysis. The Inorganic Statement of Work (SOW) specifies ICP-AES analysis for soil samples. No adverse effect on data quality is expected.

Additional Comments

All method requirements specified in the EPA Contract Laboratory Program (CLP) SOW, except as noted, have been met.

Analytical results are listed in Table 1A with qualifications. Definitions of data qualifiers used in Table 1A are listed in Table 1B.

This report was prepared in accordance with the following documents:

- Region 9 Standard Operating Procedure 906, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Inorganic Data Packages*;
- *USEPA Contract Laboratory Program Statement of Work For Inorganic Analysis Multi-Media, Multi-Concentration* ILM05.3, March 2004; and
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, October 2004.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Data Completeness	Yes	
2.	Sample Preservation and Holding Times	Yes	
3.	Calibration	Yes	
	a. Initial		
	b. Initial and Continuing Calibration Verification		
	c. CRQL Check Standard (CRI)		
4.	Blanks	Yes	B
5.	ICP Interference Check Sample (ICS)	Yes	
6.	Laboratory Control Sample (LCS)	Yes	
7.	Duplicate Sample Analysis	Yes	
8.	Matrix Spike Sample Analysis	Yes	
9.	ICP Serial Dilution Analysis	No	C
10.	ICP-MS Internal Standards	N/A	
11.	Field Duplicate Sample Analysis	No	D
12.	Sample Quantitation	Yes	A
13.	Overall Assessment	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. Results above the method detection limit (MDL) but below the contract required quantitation limit (CRQL) (denoted with an "L" qualifier) are estimated and flagged "J" in Table 1A.

Results above the MDL but below the CRQL are considered qualitatively acceptable but quantitatively unreliable due to uncertainties in the analytical precision near the limit of quantitation.

B. The following result is reported as non-detected (U) in Table 1A due to low level preparation blank (PBS) contamination.

- Mercury in sample MY1AM0

The mercury was found in preparation blank PBS at 0.030 mg/kg and is greater than the MDL but less than the CRQL. Sample results greater than or equal to the MDL but less than the CRQL are reported as non-detected (U) at the CRQL.

A preparation blank is an analytical control that contains distilled, deionized water, or baked sand for solid matrices, and reagents, which is carried through the entire analytical procedure. The preparation blank is used to determine the level of contamination introduced by the laboratory during preparation and analysis.

C. The following results are estimated and flagged "J" in Table 1A because an ICP serial dilution result is outside method QC limits.

- Potassium in all samples

The percent difference for the ICP serial dilution analysis of sample MY1AM2L did not meet the 10% criterion for potassium as shown below.

Analyte	% Difference
Potassium	-24

Results reported for potassium in all samples are considered quantitatively uncertain. Chemical and physical interferences may exist due to sample matrix effects. The result for the diluted sample was lower than the original. Therefore, the reported potassium sample results may be biased high.

A five-fold dilution of the laboratory QC sample is performed in association with the ICP procedure to indicate whether interference exists due to sample matrix effects. If the analyte concentration is sufficiently high (minimally a factor of 50 above the MDL in the original sample), the five fold serial dilution must agree within 10% of the original results after correction for dilution.

D. Relative percent differences (RPDs) of 102 and 38 were obtained for lead and manganese, respectively, in the analysis of field duplicate pair samples MY1AM0 and MY1AM1. Since sampling variability is included in the measurement, field duplicate results are expected to vary more than laboratory duplicates which have a ±35 RPD criterion for precision. The effect on data quality is not known.

The analysis of field duplicate samples is a measure of both field and analytical precision. The imprecision in the results of the analysis of the field duplicate pair may be due to the sample matrix, sample non-homogeneity, or poor sampling or laboratory technique.

SFUND RECORDS CTR
2156445

ICF CONSULTING

ICF Consulting / Laboratory Data Consultants
Environmental Services Assistance Team, Region 9
1337 South 46th Street, Building 201, Richmond, CA 94804-4698
Phone: (510) 412-2300 Fax: (510) 412-2304

MEMORANDUM

TO: Chris Lichens, Remedial Project Manager
Site Cleanup Section 4, SFD-7-4

THROUGH: Rose Fong, ESAT Task Order Project Officer (TOPO) RF
Quality Assurance (QA) Program, MTS-3

FROM: Doug Lindelof, Data Review Task Manager Wait for DL
Region 9 Environmental Services Assistance Team (ESAT)

ESAT Contract No.: 68-W-01-028
Technical Direction Form No.: 00905082 Amendment 2

DATE: June 23, 2006

SUBJECT: Review of Analytical Data, Tier 3

Attached are comments resulting from ESAT Region 9 review of the following analytical data:

Site:	Omega Chem OU2
Site Account No.:	09 BC LA02
CERCLIS ID NO.:	CAD042245001
Case No.:	34569
SDG No.:	Y2312
Laboratory:	A4 Scientific, Inc. (A4)
Analysis:	Volatiles
Samples:	4 Groundwater Samples (see Case Summary)
Collection Date:	September 2, 2005
Reviewer:	Calvin Tanaka, ESAT/Laboratory Data Consultants

This report has been reviewed by the EPA TOPO for the ESAT contract, whose signature appears above.

If there are any questions, please contact Rose Fong (QA Program/EPA) at (415) 972-3812.

Attachment

cc: Ray Flores, CLP PO USEPA Region 6
Steve Remaley, CLP PO USEPA Region 9

CLP PO: [X] Attention [ ] Action

SAMPLING ISSUES: [X] Yes [ ] No

Data Validation Report

Case No.: 34569
SDG No.: Y2312
Site: Omega Chem OU2
Laboratory: A4 Scientific, Inc. (A4)
Reviewer: Calvin Tanaka, ESAT/LDC
Date: June 23, 2006

I. CASE SUMMARY

Sample Information

Samples:	Y2312, Y2315, Y2316, and Y2317
Concentration and Matrix:	Low Concentration Water
Analysis:	Volatiles
SOW:	OLC03.2
Collection Date:	September 2, 2005
Sample Receipt Date:	September 3, 2005
Extraction Date:	Not Applicable
Analysis Date:	September 7 and 8, 2005

Field QC

Field Blanks (FB):	Y2317
Equipment Blanks (EB):	Not Provided
Trip Blank (TB):	Not Provided
Background Samples (BG):	Not Provided
Field Duplicates (D1):	Y2315 and Y2316

Laboratory QC

Method Blanks & Associated Samples:

VBLK82:	Y2312, Y2312DL, Y2315, Y2316, Y2317, Y2317MS, and Y2317MSD
VBLK83:	Storage blank VHBLK01

Tables

1A: Analytical Results with Qualifications
1B: Data Qualifier Definitions for Organic Data Review
2: Calibration Summary

CLP PO Action

None.

CLP PO Attention

1. Detected results for some analytes are qualified as nondetected and estimated (U,J) due to method blank, storage blank, and field blank contamination (see Comment B).

2. Results for methylene chloride in all samples are qualified as estimated (J) due to a calibration problem (see Comment C).

3. Results for some analytes in samples Y2312 and Y2315 are qualified as estimated (J) due to deuterated monitoring compound (DMC) recovery problems (see Comment D).

Sampling Issues

1. Detected results for acetone and benzene are qualified as nondetected and estimated (U,J) due to field blank contamination (see Comment B).

2. No sample was designated for "laboratory QC" on the traffic report & chain of custody record (TR/COC). The laboratory performed matrix spike/matrix spike duplicate (MS/MSD) analysis on Y2317. However, Y2317 is a field blank; consequently, spike recovery and relative percent difference data are not meaningful.

Additional Comments

The DMC trans-1,3-dichloropropene-d4 had RRFs below the 0.05 validation criterion in the initial and continuing calibrations (see Table 2). Quantitation of the analytes associated with this DMC may have been affected by the low RRFs (see attached Table 9 from the Functional Guidelines).

Other than a laboratory artifact (approximate retention time of 8.2 minutes), tentatively identified compounds (TICs) were found in sample Y2312 (see attached Form 1LCF).

The laboratory performed manual integrations on samples due to incorrect auto integration. Manual integrations were reviewed and found to be satisfactory and in compliance with proper integration techniques.

This report was prepared in accordance with the following documents:

- ESAT Region 9 Standard Operating Procedure 901, *Guidelines for Data Review of Contract Laboratory Program Analytical Services (CLPAS) Volatile and Semivolatile Data Packages*;

- *USEPA Contract Laboratory Program Statement of Work for Analysis of Low Concentration Organic,* OLC03.2, December 2000; and

- USEPA Contract Laboratory Program National Functional Guidelines for Low Concentration Organic Data Review, June 2001.

II. VALIDATION SUMMARY

The data were evaluated based on the following parameters:

	Parameter	Acceptable	Comment
1.	Holding Time/Preservation	Yes	
2.	GC/MS Tune/GC Performance	Yes	
3.	Initial Calibration	No	C
4.	Continuing Calibration	Yes	
5.	Laboratory Blanks	No	B
6.	Field Blanks	No	B
7.	Deuterated Monitoring Compounds	No	D
8.	Matrix Spike/Matrix Spike Duplicates	N/A	
9.	Laboratory Control Samples/Duplicates	N/A	
10.	Internal Standards	Yes	
11.	Compound Identification	Yes	
12.	Compound Quantitation	Yes	A, E
13.	System Performance	Yes	
14.	Field Duplicate Sample Analysis	Yes	

N/A = Not Applicable

III. VALIDITY AND COMMENTS

A. The following results, denoted with an "L" qualifier, are estimated and flagged "J" in Table 1A.

- All detected results below the contract required quantitation limits

Results below the contract required quantitation limits (CRQLs) are considered to be qualitatively acceptable, but quantitatively unreliable, due to the uncertainty in analytical precision near the limit of detection.

B. The following results are qualified as nondetected and estimated due to method blank, storage blank, and field blank contamination and are flagged "U,J" in Table 1A.

- Acetone in samples Y2315 and Y2316
- Methylene chloride in samples Y2312, Y2315, and Y2317
- Benzene in sample Y2312

Acetone was found in method blank VBLK83 and field blank Y2317, methylene chloride was found in storage blank VHBLK01, and benzene was found in field blank Y2317 (see Table 1A for concentrations). Results for the samples listed above are considered nondetected and estimated (U,J) and quantitation limits have been raised according to blank qualification rules presented below.

No positive results are reported unless the concentration of the compound in the sample exceeds 10 times the amount in any associated blank for common laboratory contaminants or 5 times the amount for other compounds. If the sample result is greater than the CRQL, the quantitation limit is raised to the sample result and reported as nondetected. If the sample result is less than the CRQL, the result is reported as nondetected at the CRQL.

The acetone result for sample Y2312 (29 μg/L) is not qualified as nondetected and estimated since the concentration exceeds 10 times the amount in field blank Y2317 (1.7 μg/L). The chloroform result for sample Y2312 (86 μg/L) is not qualified as nondetected and estimated since the concentration exceeds 5 times the amount in storage blank VHBLK01 (0.21 μg/L).

A storage blank is laboratory reagent water stored in a vial in the same area as the field samples. The storage blank is used to determine the level of contamination introduced by the laboratory during sample storage prior to analysis.

A laboratory method blank is laboratory reagent water or baked sand analyzed with all reagents, deuterated monitoring compounds, and internal standards and carried through the same sample preparation and analytical procedures as the field samples. The laboratory method blank is used to determine the level of contamination introduced by the laboratory during analysis.

A field blank is clean water prepared as a sample in the field by the sampler and shipped to the laboratory with the samples. A field blank is intended to detect contaminants that may have been introduced in the field, although any laboratory introduced contamination will be present. Contaminants that are found in the field blank which are absent in the laboratory method blank could be indicative of a field QC problem, a deficiency in the bottle preparation procedure, a difference in preparation of the laboratory and field blanks, or other indeterminate error.

C. Results for the following analyte are qualified as estimated due to a large percent relative standard deviation (%RSD) in the initial calibration and are flagged "J" in Table 1A.

- Methylene chloride in all samples, all method blanks, and storage blank VHBLK01

The %RSD exceeded the ≤30.0% validation criterion for methylene chloride in the initial calibration (see Table 2).

The DMC trans-1,3-dichloropropene-d4 also had a %RSD that exceeded the ≤30.0% validation criterion in the initial calibration (see Table 2). Quantitation of the analytes associated with this DMC may have been affected by the high %RSD (see attached Table 9 from the Functional Guidelines).

The initial calibration demonstrates that the instrument is capable of acceptable performance in the beginning of the analytical run and of producing a linear calibration curve.

D. Results for the following analytes are qualified as estimated due to DMC recoveries outside QC limits and are flagged "J" in Table 1A.

{Chloroform-d}

- 1,1-Dichloroethane and chloroform in sample Y2312

{trans-1,3-Dichloropropene-d4}

- cis-1,3-Dichloropropene, trans-1,3-dichloropropene, and 1,1,2-trichloroethane in sample Y2315

The DMC recoveries outside QC limits are shown below.

Sample	DMC	% Recovery	QC Limits
Y2312	Chloroethane-d5	210	60-126
Y2312	Chloroform-d	170	80-123
Y2315	trans-1,3-Dichloropropene-d4	78	80-128
Y2317MSD	1,1,2,2-Tetrachloroethane-d2	71	75-131

Detected results for affected analytes where DMC recoveries fell below QC limits may be biased low; where results are nondetected, false negatives may exist. Detected results for affected analytes where DMC recoveries exceeded QC limits may be biased high. For DMC recoveries that exceeded QC limits, only detected results for associated analytes are qualified. The DMC chloroethane-d5 recovery for sample Y2312 exceeded the QC limit but results were not qualified because they were nondetects. The samples were not reanalyzed.

Surrogates (e.g., deuterated monitoring compounds (DMCs)) are organic compounds which are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples. All samples are spiked with DMCs prior to purging. DMCs provide information about both the laboratory performance on individual samples and the possible effects of the sample matrix on the analytical results.

E. Sample Y2312 was reanalyzed at a 50-fold dilution due to high levels of trichlorofluoromethane, 1,1-dichloroethene, 1,1,2-trichloro-1,2,2-trifluoroethane, chloroform, trichloroethene, and tetrachloroethene that exceeded the calibration range. Results for these analytes are reported from the diluted analysis in Table 1A; results for other analytes are reported from the undiluted analysis.

TECHNICAL DIRECTION NO. 00905083 Amendment 2

SITE ACCOUNT NO: 09 BC LA02 **SITE NAME: Omega Chem OU2**
CERCLIS CAD042245001 [X] RI/RA [] Site Assess [] Enforcement [] Emergency Resp

TO NUMBER: 009 68-W-01-028 ICF Consulting **DATE:** ~~3-31-06~~ ~~5-2-06~~ 6-1-06

TASK: 5. Superfund Data Review/Document Review **TOPO:** Rose Fong

DESCRIPTION OF SERVICES TO BE PERFORMED: (Include Any Deliverables, Due Dates Or Other Details Provided To Contractor of Performance Required)

Amendment 1: delay due date to 6-26-06.
Amendment 2: delay due date to 6-29-06.

Data Package & Project Information

Data packages are in Rm. 506. No TRLs for CEIMIC; note lab closure in reports.

Case	SDG	Laboratory	Analysis	#Samples	Tier		EPA Site Manager	Mail Code
32648	Y19J8	ENVSYS	V, SV	2	3	B32648.W01044.Y19J8.WK4	Chris Lichens, RPM	SFD-7-4
32989	MY1C21	CEIMIC	M	16	3	B32989.W02063.MY1C21.WK4		
33335	Y1FR9	SHEALY	V, SV	20	3	B33335.W01040.Y1FR9.WK4		
	MY1FS0	CEIMIC	M	19	3	B33335.W02063.MY1FS0.WK4		
33625	MY1LN4	SENTIN	CN	9	3	B33625.W02063.MY1LN4.WK4		
33916	Y1QZ5	LIBRTY	V	19	3	B33916.W01043.Y1QZ5.WK4		
34569	Y2312	A4	V	4	3	Y2312.WK4		

QA_QC_OU2.pdf

Deliverable	Due date
[X] Tier 3 Validation Reports	6-29-06 ~~6-26-06~~ ~~6-16-06~~

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	3/6/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	32648
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y19H0	Equip / **Field** / Travel	3/2/2004
Y19J3	Equip / **Field** / Travel	3/4/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y19G8	3/2/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y19H3	Y19H2	3/3/2004	a / **b** / c / d
Y19H8	Y19H7	3/3/2004	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
X	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
	Less Than Required Sample Volume	
	Low Flow/Recharge Rates	
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	3/6/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	R04S42
Office:	CH2M HILL / Santa Ana	Laboratory:	Region 9
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
OC2-00-W-2-3	Equip / **Field** / Travel	3/2/2004
OC2-00-W-2-16	Equip / **Field** / Travel	3/4/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
OC2-MW1A-W-0-1	3/2/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
OC2-MW4A-W-1-6	OC2-MW4A-W-0-5	3/3/2004	a / **b** / c / d
OC2-MW6A-W-1-11	OC2-MW6A-W-0-10	3/3/2004	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
X	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
	Less Than Required Sample Volume	
	Low Flow/Recharge Rates	
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	6/25/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	32989
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y1C05	**Equip** / Field / Travel	6/15/2004
Y1C16	Equip / **Field** / Travel	6/21/2004
Y1C29	Equip / **Field** / Travel	6/23/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y1C07 / MY1C07	6/16/2004
Y1C34 / MY1C34	6/24/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y1C12 / MY1C12	Y1C11 / MY1C11	6/17/2004	a / **b** / c / d
Y1C18 / MY1C18	Y1C17 / MY1C17	6/21/2004	a / **b** / c / d
Y1C27 / MY1C27	Y1C26 / MY1C26	6/23/2004	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

X	None
	Pumping Equipment Problems
	Sample Filtering Problems
	Less Than Required Sample Volume
	Low Flow/Recharge Rates
	Preservation Problems
	Samples Not Shipped in 24 hrs.
	Federal Express Delay
	Other

Sample # / Date (s) of Occurence / Comments

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	6/25/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	R04S63
Office:	CH2M HILL / Santa Ana	Laboratory:	Region 9
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
OC2-00-W-3-24	**Equip** / Field / Travel	6/15/2004
OC2-00-W-2-35	Equip / **Field** / Travel	6/21/2004
OC2-00-W-2-48	Equip / **Field** / Travel	6/23/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
OC2-OW5-W-5-26	6/16/2004
OC2-MW11A-W-5-53	6/24/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
OC2-OW3-W-1-31	OC2-OW3-W-0-30	6/17/2004	a / **b** / c / d
OC2-MW4A-W-1-37	OC2-MW4A-W-0-36	6/21/2004	a / **b** / c / d
OC2-MW1A-W-1-46	OC2-MW1A-W-0-45	6/23/2004	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
X	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
	Less Than Required Sample Volume	
	Low Flow/Recharge Rates	
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	9/27/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	33335
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y1FR9	Equip / **Field** / Travel	9/13/2004
Y1FT0	Equip / **Field** / Travel	9/15/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y1FT1 / MY1FT1	9/15/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y1FS2 / M1FS2	Y1FS1 / MY1FS1	9/13/2004	a / **b** / c / d
Y1FT6 / MY1FT6	Y1FT5 / MY1FT5	9/16/2004	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
X	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
	Less Than Required Sample Volume	
	Low Flow/Recharge Rates	
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	9/27/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	R04S85
Office:	CH2M HILL / Santa Ana	Laboratory:	Region 9
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
OC2-00-W-2-57	Equip / **Field** / Travel	9/13/2004
OC2-00-W-2-68	Equip / **Field** / Travel	9/15/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
OC2-MW8B-W-5-69	9/15/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
OC2-MW4B-W-1-60	OC2-MW4B-0-59	9/13/2004	a / b / c / d
OC2-MW7A-W-1-74	OC2-MW7A-0-73	9/16/2004	a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
X	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
	Less Than Required Sample Volume	
	Low Flow/Recharge Rates	
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	12/13/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	R05S18
Office:	CH2M HILL / Santa Ana	Laboratory:	Region 9
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
OC2-00-W-2-78	Equip / **Field** / Travel	11/30/2004
OC2-OW1A-W-3-84	**Equip** / Field / Travel	12/1/2004
OC2-00-W-2-96	Equip / **Field** / Travel	12/6/2004
OC2-00-W02-111	Equip / **Field** / Travel	12/9/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
OC2-OW7-W-5-79	11/30/2004
OC2-MW9B-W-0-101	12/7/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
OC2-OW5-W-1-87	OC2-OW5-W-0-86	12/2/2004	a / b / c / d
OC2-MW4B-W-1-94	OC2-MW4B-W-0-93	12/2/2004	a / b / c / d
OC2-MW7A-W-1-103	OC2-MW7A-W-0-102	12/7/2004	a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
X	Less Than Required Sample Volume	OC2-OW1A-W-0-90 / Dec 8, 2004 / Slow recovery rate of well
X	Low Flow/Recharge Rates	Only requested analyis for VOCs, 1,4-Dioxiane, and Cr+6
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	12/13/2004	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	33625
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y1LL1	Equip / **Field** / Travel	11/30/2004
Y1LL7	**Equip** / Field / Travel	12/1/2004
Y1LM9	Equip / **Field** / Travel	12/6/2004
Y1LP4	Equip / **Field** / Travel	12/9/2004
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y1LL2 / MY1LL2	11/30/2004
Y1LN4 / MY1LN4	12/7/2004

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y1LM0 / MY1LM0	Y1LL9 / MY1LL9	12/2/2004	a / b / c / d
Y1LM7 / MY1LM7	Y1LM6 / MY1LM6	12/2/2004	a / b / c / d
Y1LN6 / MY1LM6	Y1LN5 / MY1LN5	12/7/2004	a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
X	Less Than Required Sample Volume	Y1LM3 / Dec 8, 2004 / Slow recovery rate of well
X	Low Flow/Recharge Rates	Only requested analyis for VOCs, 1,4-Dioxiane, and Cr+6
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	3/7/2005	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	R05S37
Office:	CH2M HILL / Santa Ana	Laboratory:	Region 9
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
OC2-00-W-2-115	Equip / **Field** / Travel	2/28/2005
OC2-00-W-2-132	Equip / **Field** / Travel	3/3/2005
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
OC2-MW4B-W-5-113	2/28/2005

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
OC2-MW4A-W-1-112	OC2-MW4A-W-0-116	2/28/2005	a / **b** / c / d
OC2-MW1B-W-1-125	OC2-MW1B-W-0-124	3/2/2005	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

	None
	Pumping Equipment Problems
	Sample Filtering Problems
	Less Than Required Sample Volume
	Low Flow/Recharge Rates
	Preservation Problems
	Samples Not Shipped in 24 hrs.
	Federal Express Delay
	Other

Sample # / Date (s) of Occurence / Comments

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	3/7/2005	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	33916
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	714.435.6215		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y1QZ8	Equip / **Field** / Travel	2/28/2005
Y1R15	Equip / **Field** / Travel	3/3/2005
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y1QZ6	2/28/2005

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y1QZ5	Y1QZ9	2/28/2005	a / **b** / c / d
Y1R08	Y1R07	3/2/2005	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

	None
	Pumping Equipment Problems
	Sample Filtering Problems
	Less Than Required Sample Volume
	Low Flow/Recharge Rates
	Preservation Problems
	Samples Not Shipped in 24 hrs.
	Federal Express Delay
	Other

Sample # / Date (s) of Occurence / Comments

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	3/14/2006	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	34569
Office:	CH2M HILL / Santa Ana	Laboratory:	CLP
Phone:	213.228.8271		

Mattrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
Y22Z9	Equip / **Field** / Travel	8/30/2005
Y2317	Equip / **Field** / Travel	9/2/2005
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
Y2302	8/30/2005

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
Y2301	Y2300	8/30/2005	a / **b** / c / d
Y2316	Y2315	9/2/2005	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
X	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
	Less Than Required Sample Volume	
	Low Flow/Recharge Rates	
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

FIELD QA/QC SUMMARY FORM

Instructions: Complete one form per laboratory and per matrix for each sampling event.

Date:	3/14/2006	Site:	Omega Chemical OU-2
Sampler:	Dan Jablonski	Case/SAS#:	R05S77
Office:	CH2M HILL / Santa Ana	Laboratory:	Region 9
Phone:	213.228.8271		

Matrix: (check one)

X	Groundwater		Surface Soil		Air
	Surface Water		Subsurface Soil		Other

I. BLANKS

Sample #	Type (circle one)	Date Collected
OC2-MW4A-W-2-136	Equip / **Field** / Travel	8/30/2005
OC2-MW11-W-2-154	Equip / **Field** / Travel	9/2/2005
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	
	Equip / Field / Travel	

II. BACKGROUND SAMPLES

Sample #	Date Collected

III. LAB QC SAMPLES

Sample #	Date Collected
OC2-MW5-W-5-139	8/30/2005

IV. DUPLICATES

Sample #	Matches Sample #	Date Collected	Type (circle one)
OC2-MW6-W-1-138	OC2-MW6-W-0-137	8/30/2005	a / **b** / c / d
OC2-MW11-W-1-153	OC2-MW11-W-0-152	9/2/2005	a / **b** / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d
			a / b / c / d

a= composite split
b= consecutive
c= colocated
d= soil sleeves

V. CHECKLIST OF FIELD PROBLEMS ENCOUNTERED

		Sample # / Date (s) of Occurence / Comments
X	None	
	Pumping Equipment Problems	
	Sample Filtering Problems	
	Less Than Required Sample Volume	
	Low Flow/Recharge Rates	
	Preservation Problems	
	Samples Not Shipped in 24 hrs.	
	Federal Express Delay	
	Other	

Sampling Dates: 6/26/06 - 6/30/06

ANALYSES

ANALYSES:

Samples	Matrix	Analyses	Method	Lab
3	air	VOCs	TO-15	R9L

TAT

21 days

Data Distribution:

EDD (CH2M-Hill format): tperina@ch2m.com, djablon1@ch2m.com
.pdf report copy: tperina@ch2m.com

Lab Assignment Number **Case**

R9 Lab Case # R06S72

DATA VALIDATION

DATA VALIDATION:

Compounds/Analytes **Validation Tier** **Percentage Level**

Turn Around Times:

Supplemental Data Validation Information :
1.

Company **Due Date**

Validation Received

Validation Forwarded

CONTRACTOR/SAMPLER INFO.

CONTRACTOR/SAMPLER INFO.:

Sampler Name: Kerang Sun
Company: CH2M-Hill
Office Phone Number: 714-435-6324

Project Manager: Tom Perina
951.276.3003 ext. 24

Mobile Phone Number:
Email: kerang.sun@ch2m.com
Office Address: CH2M-Hill
3550 Vine Street, Suite 320
Riverside, CA 92507

EVENT NOTES

EVENT NOTES:

RSCC FORM

Please find attached lab request form for the June 2006 indoor air sampling at Omega Chemicals. The event is tentatively to occur in the last week of June. We are planning to take 3 samples with 6-L Summa containers, 8-hour flow . Please prepare us the sampling equipment (including necessary fittings if they are part of your supply) calibrated for the specified sampling method.

We will inform you on any changes on sampling schedule and/or method. Let me know if you have any questions.

Kerang

Omega OU-1 RSCC Form June 2006 Indoor Air.doc

FIELD QC, TR, & COC

FIELD QC, TR, & COC:

DATA

DATA:

NOTE: To insert a tab into body of text, press <Ctrl><Tab> keys simultaneously.

Section 5
(Fill in table or attach copy of analytical description from Sampling and Analysis Plan)

Analysis (method, CLP SOW number, or R9 Lab SOP number)	Matrix	No. of samples	TAT	Review/ Validation
VOCs (EPA Region 9 Lab Procedure [a, b]), see list of analytes and detection limits below	Indoor Air	3 (tentative)	21 days	Tier 3

a) The analyses for the organics listed below will be per EPA Contract Laboratory Program (CLP) methodology. Per project needs, detection limits and the analyte list differ from the standard CLP lists, the analyses can be carried out per special services provisions currently available under the CLP. If needed low/trace level statements of work (to include use of ICP/MS or SIM) or larger sample volumes may be used to attain lower level detection limits. If CLP is unavailable, the analyses can be carried out at the EPA Regional laboratory using the laboratory's standard operating procedures and quality assurance equivalent to CLP.

b) See section 6 for analyte list and needed detection levels.

Section 6
Include (or attach separately) any discussion of expanded or reduced analyte lists, required reporting limits, specialized preparation or analytical procedures, etc.

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
Volatile Organic Compounds			
Acetone			10
Benzene			2.0
Bromobenzene			NT
Bromochloromethane			NT
Bromodichloromethane			2.0
Bromoform			2.0
Bromomethane			2.0
n-Butylbenzene			NT
sec-Butylbenzene			NT
tert-Butylbenzene			NT
Carbon tetrachloride			2.0
Chlorobenzene			2.0
Chloroethane			4.0
Chloroform			2.0
Chloromethane			4.0
2-Chlorotoluene			NT
4-Chlorotoluene			NT
Dibromochloromethane			2.0
1,2-Dibromo-3-chloropropane			NT
1,2-Dibromoethane			2.0
Dibromomethane			NT
1,2-Dichlorobenzene			2.0
1,3-Dichlorobenzene			NT
1,4-Dichlorobenzene			2.0
Dichlorodifluoromethane (Freon 12)			2.0
1,1-Dichloroethane			2.0
1,2-Dichloroethane			2.0
1,1-Dichloroethene			2.0
cis-1,2-Dichloroethene			2.0
trans-1,2-Dichloroethene			2.0
1,2-Dichloropropane			2.0
1,3-Dichloropropane			NT
2,2-Dichloropropane			NT
1,1-Dichloropropene			NT
cis-1,3-Dichloropropene			2.0

AIR ANALYTE LIST AND DETECTION LEVELS

Parameter			Laboratory Target Reporting Limit (ppb (v/v))[1]
trans-1,3-Dichloropropene			2.0
Ethylbenzene			2.0
Hexachlorobutadiene			4.0
Isopropylbenzene			NT
p-Isopropyltoluene			NT
Methylene chloride			2.0
Methyl tert-butyl ether			NT
Naphthalene			NT
n-Propylbenzene			NT
Styrene			2.0
1,1,1,2-Tetrachloroethane			NT
1,1,2,2-Tetrachloroethane			2.0
Tetrachloroethene			2.0
Toluene			2.0
1,2,3-Trichlorobenzene			NT
1,2,4-Trichlorobenzene			2.0
1,1,1-Trichloroethane			2.0
1,1,2-Trichloroethane			2.0
Trichloroethene			2.0
Trichlorofluoromethane (Freon 11)			2.0
1,2,3-Trichloropropane			NT
Trichlorotrifluoroethane (Freon 113)			2.0
1,2,4-Trimethylbenzene			2.0
1,3,5-Trimethylbenzene			2.0
Vinyl chloride			2.0
o-Xylene			2.0
m,p-Xylenes			2.0

Notes:
[1]Reporting Limits (RLs) shown are for samples that have not been diluted. RLs are matrix dependent and may be higher or lower than listed.

N/A – Not applicable
NT – Not a target analyte