



**Temporary Accumulation Area 314  
Marine Corps Air Station  
El Toro, California**

SM/DIV Contract No. N68711-93-D-1459 — Delivery Order No. 0070 — Revision 0  
M Project No. 18609 — Document Control No. SW5979 — December 23, 1998

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# **Closure Report**

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Appendix A - JEG RFA Background Information; Appendix B - BNI VSI Evaluation Report;  
Appendix C - Site Photographs; Appendix D - Site Assessment Log; Appendix E - Geophysical  
Survey Data; Appendix F - Land Survey Data; Appendix G - Laboratory Analytical Results for  
TAA Effluent Treated Water; Appendix H - Laboratory Analytical Results; Appendix I - LDC  
Data Validation Report; Appendix J - Tentative Reuse Parcel Location of TAA 314

# Closure Report

*Temporary Accumulation Area 314*

*Marine Corps Air Station*

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*SWDIV Contract No. N68711-93-D-1459, Delivery Order No. 0070*

*OHM Project No. 18609*

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*Revision 0*

*December 23, 1998*



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A Subsidiary of OHM Corporation

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# Table of Contents

<i>List of Figures</i> .....	<i>iii</i>
<i>List of Tables</i> .....	<i>iii</i>
<i>Acronyms and Abbreviations</i> .....	<i>iv</i>
<b>Section 1 Introduction</b> .....	<b>1-1</b>
1.1 Site Location.....	1-1
1.2 Project Objectives.....	1-1
1.3 Regulatory Background and Cleanup Goals.....	1-2
1.4 Project Scope of Work.....	1-2
<b>Section 2 Previous Investigations and Site Background</b> .....	<b>2-1</b>
2.1 RCRA Facility Assessment.....	2-1
2.2 Remedial Investigation.....	2-2
<b>Section 3 Field Activities</b> .....	<b>3-1</b>
3.1 Preparatory Work.....	3-1
3.2 Confirmation Soil Sampling.....	3-1
3.3 Equipment Decontamination.....	3-2
3.4 Field Quality Control Activities.....	3-2
3.5 Land Surveying.....	3-2
3.6 Waste Management.....	3-2
<b>Section 4 Sampling Analytical Results and Data Quality Assessment</b> .....	<b>4-1</b>
4.1 Field Sampling Summary.....	4-1
4.2 Analytical Methods.....	4-2
4.3 Laboratory Analytical Results.....	4-3
4.3.1 Confirmation Soil Sample Analytical Results.....	4-3
4.4 Data Quality Assessment.....	4-5
4.4.1 Soil Samples.....	4-5
4.5 Data Validation.....	4-6
4.5.1 Analytical Quality Control Program.....	4-6
<b>Section 5 Risk Characterization and Hazard Index Calculation</b> .....	<b>5-1</b>
5.1 Physical Characteristics of the TAA 314 Site.....	5-1
5.2 Exposure Assessment.....	5-1
5.3 Toxicity Assessment.....	5-2
5.4 Risk Characterization.....	5-2
<b>Section 6 Conclusions and Recommendations</b> .....	<b>6-1</b>
<b>Section 7 References</b> .....	<b>7-1</b>

# ***Table of Contents (Cont)***

***Appendix A JEG RFA Background Information***

***Appendix B BNI VSI Evaluation Report***

***Appendix C Site Photographs***

***Appendix D Site Assessment Log***

***Appendix E Geophysical Survey Data***

***Appendix F Land Survey Data***

***Appendix G Laboratory Analytical Results for TAA Effluent Treated Water***

***Appendix H Laboratory Analytical Results***

***Appendix I LDC Data Validation Report***

***Appendix J Tentative Reuse Parcel Location of TAA 314***

## *List of Figures*

Figure 1-1	Facility Location Map
Figure 1-2	Location Map
Figure 2-1	Vicinity Map
Figure 3-1	TAA 314 – Site Plan
Figure 5-1	Conceptual Site Model – TAA 314
Figure 5-2	Potential Migration Pathways, Exposure Routes and Receptors - TAA 314

## *List of Tables*

Table 4-1	Sample Collection Summary Log – TAA 314
Table 4-2	Confirmation Soil Sample Analytical Results - TAA 314
Table 5-1	Residential Risk Screening Worksheet for Soil
Table 5-2	Industrial Risk Screening Worksheet for Soil

# *Acronyms and Abbreviations*

%D	percent difference
µg/kg	micrograms per kilogram
BEHP	bis (2-ethylhexyl) phthalate
bgs	below ground surface
BNI	Bechtel National Inc.
BRAC	Base Realignment and Closure
CA LUFT	California Leaking Underground Fuel Tank
CCR	California Code of Regulations
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CQC	Contractor Quality Control
CTF	central treatment facility
DO	delivery order
DTSC	Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
HSO	Health and Safety Officer
HSP	Health and Safety Plan
IRP	Installation Restoration Program
JEG	Jacobs Engineering Group Inc.
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LDC	Laboratory Data Consultants
m/z	mass-to-charge
MCAS	Marine Corps Air Station
MDL	method detection limit
mg/kg	milligram per kilogram
MS	matrix spike
MSD	matrix spike duplicate
OHM	OHM Remediation Services Corp.
OU	Operable Unit
PAH	polynuclear aromatic hydrocarbon
PPE	personal protective equipment
PRG	Preliminary Remediation Goal
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RDL	reporting detection limit
RI	Remedial Investigation
RPD	relative percent difference
RRF	relative response factor
RWQCB	Regional Water Quality Control Board
SIM	selected ion monitoring

## *Acronyms and Abbreviations (Cont)*

SVOC	semi-volatile organic compound
SWDIV	Southwest Division Naval Facilities Engineering Command
SWMU	Solid Waste Management Unit
TAA	temporary accumulation area
TAL	target analyte list
TPH	total petroleum hydrocarbons
VOA	volatile organic analysis
VOC	volatile organic compound
VSI	Visual Site Inspection

# ***Section 1***

## ***Introduction***

This Closure Report summarizes the sampling activities performed at the Temporary Accumulation Area (TAA) 314 Site at the Marine Corps Air Station (MCAS) El Toro (hereinafter referred to as the "Station"), California. The work was performed by OHM Remediation Services Corp. (OHM) for the Southwest Division Naval Facilities Engineering Command (SWDIV) under Remedial Action Contract No. N68711-93-D-1459, Delivery Order (DO) 0070.

Sampling activities were conducted in accordance with the Navy, Station, and Department of Toxic Substance Control (DTSC)-approved *Draft Supplemental Work Plan, Closure of Various Temporary Accumulation Areas and RCRA Facility Assessment Sites at the Marine Corps Air Station El Toro, California* (OHM, 1997).

### ***1.1 Site Location***

The Station is located approximately 45 miles southeast of the city of Los Angeles in Orange County, California, 1 mile north of the intersection of Interstate 5 (Santa Ana) and Interstate 405 (San Diego) freeways. The Station covers approximately 4,738 acres. Approximately 800 acres of the Station property are currently designated for agricultural outlease. Agricultural outleased lands are located at the corners of the Station, and are used for plant nursery and crop production (MCAS El Toro, 1997). The location of the Station is shown in Figure 1-1, Facility Location Map.

The TAA 314 site is located in the southwestern quadrant of the Station, west of the Agua Chinon Wash in the vicinity of Building 314 (vacant), Supply Storage (Figure 1-2, Location Map). The site consists of a fuel locker area located next to Oil Water Separator (OWS) 314C near Building 314. OHM removed the inactive OWS 314C in May 1997 and OWS 314C site was closed by the Orange County Health Care Agency (OCHCA) in October 1997.

The depth to groundwater in the vicinity of the TAA 314 site was based on available water level data collected from the nearest groundwater monitoring well 18\_PS8. The location of this well is shown in Figure 1-2. Based on this data, the depth to the groundwater at TAA 314 site is approximately 103 feet below ground surface (bgs) (Camp, Dresser, & McKee, Inc. Federal Programs Corporation, 1997).

### ***1.2 Project Objectives***

The objectives of this project were the following:

- Verify that all stored hazardous wastes, residues, and constituents that may pose a potential health risk have been removed from the TAA 314 site in accordance with the MCAS El Toro Detailed Plan (OHM, 1995).

- Perform verification soil sampling and analysis to obtain “closure status” of the TAA 314 site.

Based on a classification in the Draft Supplemental Work Plan, the TAA 314 site was considered a Type 3 facility (i.e., an unbermed TAA with or without fence). Project operations at Type 3 facilities were defined as soil sampling of the unbermed area and no decontamination activities unless a paved area with spillage and stains is observed (OHM, 1997).

### ***1.3 Regulatory Background and Cleanup Goals***

The closure of the TAA 314 site is completed in accordance with the appropriate federal and state requirements. The TAA 314 site is characterized as “*hazardous waste accumulation areas*” according to the Code of Federal Regulations (CFR), Title 40, Part 262.34, and the California Code of Regulations (CCR), Title 22, Section 66262.34. Because hazardous wastes have been stored at the site, closure of the TAA 314 site is also subject to federal and state regulations for closure of less than 90 days hazardous waste management facilities (CFR 40, part 264, Subpart G; and CCR 22, Section 66264, Article 7, respectively). The cleanup goals established for the TAA 314 site are based on the following:

#### **Soil**

- United States Environmental Protection Agency (EPA) Region IX Preliminary Remediation Goals (PRGs) dated May 1998 for residential land use for organic contaminants
- Background concentrations for metals contaminants (Bechtel National Inc. [BNI], 1996)
- 5,000-milligrams per kilogram (mg/kg) concentration limit for total petroleum hydrocarbons (TPH)-purgeable
- 10,000-mg/kg concentration limit for TPH-extractable

### ***1.4 Project Scope of Work***

The Scope of Work at the TAA 314 site consists of the following tasks:

- collection and laboratory analysis of confirmation samples, including soil samples obtained from beneath and adjacent to the TAA structure
- turning over salvageable and recyclable materials to the Station's Defense Reutilization and Marketing Office for recycling
- disposal of solid wastes generated during field sampling activities
- preparation of a Closure Report to describe and document the work performed

## ***Section 2***

# ***Previous Investigations and Site Background***

The following section summarizes results from previous investigations at the TAA 314 site and background history of the TAA 314 area. Background information regarding TAA 314 site was obtained from the following documents:

1. *Final RCRA Facility Assessment Report, Marine Corps Air Station El Toro, California (Jacobs Engineering Group Inc., [JEG] 1993)*
2. *Final Addendum RCRA Facility Assessment Report, Marine Corps Air Station El Toro, California (BNI, 1996a)*
3. *Bechtel National, Incorporated. 1997. Draft Final Phase II Remedial Investigation Report, Operable Unit 2A-Site 24, Marine Corps Air Station, El Toro, California. (Navy Contract N68711-92-D-4670, CTO 73, BNI 1997)*
4. *Final Base Realignment and Closure Cleanup Plan, March 1997, Marine Corps Air Station El Toro, California (MCAS El Toro, 1997)*

### ***2.1 RCRA Facility Assessment***

In 1991, JEG, as part of the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA), performed the initial Preliminary Review and a Visual Site Inspection (VSI) of the 307 Solid Waste Management Units (SWMUs) within the Station. JEG also conducted a site visit to observe the current conditions of the SWMUs and/or TAA sites, and performed limited sampling. JEG identified a fuel storage locker area near south side of Building 314 as SWMU 269. JEG as part of the RFA sampling visit advanced one soil boring up to 25 feet below ground surface (bgs) in the vicinity of SWMU 269. A total of five soil samples were collected from soil boring 269B1. No Volatile Organic Compounds (VOCs) were detected above the laboratory reporting limit from all five samples. JEG recommended "No Further Action" for SWMU 269. The analytical data and sample location map from the JEG RFA report are included in Appendix A, JEG RFA Background Information.

After review of the JEG RFA report, DTSC requested additional information about the TAAs to determine the closure requirements. BNI performed the visual assessment of 73 TAA sites to provide more specific information for a closure strategy for the TAAs. BNI identified SWMU 269, a field locker storage area near Building 314 as TAA 314. During the BNI VSI in November 1995, no fuel locker or any drums were found at the TAA 314 Site. Therefore, no soil sampling was performed by BNI. A copy of the TAA 314 site VSI evaluation form from the BNI Final RFA Addendum report is included in Appendix B, BNI VSI Evaluation Report for TAA 314.

## ***2.2 Remedial Investigation***

TAA 314 is located above the VOC plume in the shallow aquifer within the site boundary of Installation Restoration Program (IRP) Site 24, the VOC Source Area. However, the presence of trichloroethylene (TCE) and other chlorinated solvents is believed to be associated with the sources identified in the IRP Site 24. Figure 1-3, Vicinity Map shows the location of the TAA 314 relative to IRP Site 24.

As part of the Remedial Investigation (RI), a significant amount of data collection and interpretation has already been completed for IRP Site 24. Historical aerial photographs were reviewed; and air, soil, soil-gas, and groundwater samples were collected and analyzed during the RI field activities. Also, a fate and transport conceptual model was developed and human health risk assessment was conducted for Site 24.

Field investigations were conducted under Phase I and Phase II of the RI to ascertain the nature and extent of groundwater contamination at the Station (BNI, 1997). JEG and BNI, respectively, completed the Phase I and Phase II Remedial Investigations (RI) for IRP Site 24 under Comprehensive Environmental Response Compensation and Liability Act (CERCLA) program. The highest VOC concentrations, particularly TCE, was identified in groundwater beneath IRP Site 24.

The groundwater quality in the local monitoring wells was also examined as part of the RI. Well 08\_DGMW74 is considered to be downgradient approximately 200 feet southeast of TAA 314 site. Well 18\_PS8 is cross gradient approximately 350 feet northeast of TAA 314 site. Wells 18\_PS8 and 08DGMW74 have been impacted by TCE (CDM 1997). Groundwater conditions in the vicinity of the TAA 314 will be addressed in the Record Of Decision for IRP Site 24.

## ***Section 3***

### ***Field Activities***

The following subsections describe the activities that were performed at the TAA 314 site. Field activities were conducted in accordance with the approved *Draft Supplemental Work Plan* (OHM, 1997).

Field activities conducted at the TAA 314 site included a site inspection, preconstruction meeting, a geophysical survey, confirmation soil sampling, and waste management. Photographs of the field activities at TAA 314 Site are presented in Appendix C, Site Photographs.

#### ***3.1 Preparatory Work***

OHM performed a site visit at the TAA 314 site in January 1996 and September 1997 before performing any field activities. A copy of the Site Assessment Log is included in Appendix D, Site Assessment Log.

OHM subcontractor, Geovision, conducted a geophysical survey on January 16, 1996, to identify and locate buried utilities, pipes, and other subsurface anomalies in the vicinity of the TAA 314 site. OHM also notified Underground Service Alert of the intent to hand-auger four locations up to 2 feet bgs. A copy of geophysical survey report is included in Appendix E, Geophysical Survey Data.

OHM, in coordination with the Station's Resident Officer in Charge of Construction (ROICC), conducted a preconstruction meeting. The meeting addressed the Station's regulations for contractors, the construction schedule, health and safety coordination, construction quality control (QC), and tenant notifications.

#### ***3.2 Confirmation Soil Sampling***

Confirmation soil samples were collected from four locations at the TAA 314 site to verify if any spillage occurred during handling of hazardous material drums. Soil sample locations were selected, based on a visual inspection performed during the site visit on September 15, 1997. A total of 9 soil samples were collected from four hand-auger boring locations (SB-A, SB-B, SB-C, and SB-D) at the TAA 314 site.

Soil samples were collected in standard stainless steel sleeves at two different depths: 18 inches and 36 inches bgs. Details on the sampling strategy and analytical methods are discussed in Section 4. The locations of the hand-auger borings are shown on Figure 3-1, Site Plan.

### ***3.3 Equipment Decontamination***

Equipment used in the exclusion zone was decontaminated before removal from the site, as identified in the site-specific Health and Safety Plan (HSP). Decontamination procedures varied according to the type of equipment involved. The equipment used for collecting soil samples was decontaminated between each use. The hand-auger assembly was washed in a typical three-step procedure consisting of: decontaminating the equipment first using a brush in a bucket of Alconox detergent and water; then a second bucket of water for an immediate rinse; and again in a third bucket of water for the final rinse. The hand-auger assembly was decontaminated between each sample collection.

### ***3.4 Field Quality Control Activities***

QC of field operations were ensured by adherence to the Contractor Quality Control (CQC) Plan Addendum (OHM, 1997) and OHM Corporate Quality Assurance (QA) policies. A Field CQC Engineer was present during the soil sampling activities. QC activities included field inspections, field QC sampling, and project documentation.

During sampling activities, the OHM CQC engineer performed field inspections to verify the appropriate soil samples were collected to support the sampling work. CQC Reports, which included preparatory, initial, and follow-up inspections, were completed daily. A sample log was prepared and updated on a daily basis to ensure that all sampling efforts were performed as specified in the plans.

### ***3.5 Land Surveying***

After completing the confirmation soil sampling, the soil boring locations were surveyed by Cal Vada Surveying Inc., a California-registered land surveyor. The surveyed locations were measured to  $\pm 0.01$  foot horizontally and tied to the California State Plane Coordinate Systems, North American Datum 1983. The surveyed elevations were measured to  $\pm 0.01$  foot vertically and tied to mean sea level elevation. The land surveying data for TAA 314 site is presented as Appendix F, Land Survey Data.

### ***3.6 Waste Management***

Waste generated during the sampling activities at the TAA 314 site included the following:

- one bag (55-gallon drum liners) of personal protective equipment (PPE)
- approximately 10 gallons of decontamination wash water stored on-site at the CTF in a closed-top polyethylene storage tank, specifically marked "TAA Water."

All generated wastes have been disposed of in accordance with applicable State and Federal regulations. Based on the results and review of analytical data, OHM disposed of the wastes as follows:

- The bag of PPE was disposed off-site at Bowerman Canyon nonhazardous Class III landfill, based on the results of the soil samples.

Wastewater generated from decontamination activities was treated through the Station's CERCLA Carbon Adsorption Treatment System (operated and maintained by OHM ) located at the central treatment facility (CTF), following the determination that the constituents were within the normal range for treatment. Treated effluent water was sampled, and based on the review of the analytical results, was transferred to the Station's golf course holding tank for reuse. A copy of the analytical result of the treated water is included in Appendix G, Laboratory Analytical Results for TAA Effluent Treated Water.

# ***Section 4***

## ***Sampling Analytical Results and Data***

### ***Quality Assessment***

The objective of the sampling and analysis program was to provide analytical data to characterize the conditions of soil beneath the TAA 314 site and to verify that the use of the TAA did not impact the soil under or around the TAA 314 site. The sampling methodology, analytical methods, analytical results, and interpretation of confirmation soil sampling have been in accordance with the analytical strategy presented in the Draft Supplemental Work Plan (OHM, 1997) and are described in the following text.

The laboratory analyses were performed based on EPA Solid Waste-846 (Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, June 1997) and California Leaking Underground Fuel Tank (CA LUFT) Manual (State Water Resources Control Board, 1989). The test methods used for analyses were selected on the basis of their ability to detect the chemicals of potential concern with suitable detection limits to prove that there is no risk to human health and the environment.

All samples were analyzed by VOC Analytical Laboratory, a California-certified and Naval Facilities Engineering Services Center-approved analytical laboratory.

#### ***4.1 Field Sampling Summary***

The sampling strategy for TAA 314 focused on two aspects of the site: possible releases on the surface soil of the TAA or possible releases into the soil surrounding the TAA. Soil samples were collected and analyzed for constituents contained in the wastes that may have been stored at the TAA 314 area.

Sample locations were selected based on a visual inspection performed during the site visit on September 15, 1997. Sample collection points included any areas where there was evidence of spills or contamination of concrete. However, no visual indication of spills was observed at TAA 314.

A total of 9 soil samples (including one duplicate) were collected from four hand-auger borings (SB-A, SB-B, SB-C, and SB-D) at the TAA 314 site. Soil samples were collected in standard stainless steel sleeves at two depths: 18 inches and 36 inches bgs. The locations of the hand-auger borings are shown on Figure 3-1, Site Plan.

An concrete-coring machine was used to open a 6-inch-diameter hole in the concrete, and then a hand-auger was used to bore into the soil under the concrete to approximately 18 inches. An undisturbed soil sample was collected at approximately 18 inches and then 36 inches bgs using a hammer-driven brass tube.

Following the collection of the soil samples, the borehole was filled with excess soil and concrete (ready mix) was poured into the open borehole (no volatile organic compounds [VOCs] were identified by the photoionization detector) in the bottom of the sump to seal the opening. The surface of the concrete was then finished with a trowel to match the existing surface. The sample collection summary log is presented in Table 4-1, Sample Collection Summary Log – TAA 314.

QA/QC samples were collected as follows:

- Equipment rinsate samples were collected at a frequency of one per day.
- Trip blank samples were collected at a frequency of one per sample cooler for coolers containing samples for VOC analyses.
- Laboratory duplicate sample analysis was performed at a frequency of one per 10 samples or per batch.
- Laboratory matrix spike/matrix spike duplicate sample (MS/MSD) analysis was performed at a frequency of one per 20 samples or per batch.
- Laboratory reagent blank analysis was performed at a frequency of one per 20 samples or per batch.

## ***4.2 Analytical Methods***

Analytical methods were selected to encompass all the chemicals of potential concern at the TAA 314 site. The following methods were performed to characterize samples collected from the TAA 314 site:

- percent moisture by American Society for Testing Materials Method D2216
- total cyanide by EPA Method 9010A
- pH by EPA Method 9045
- metals by EPA Methods 6010A and 7000 Series
- SVOCs by EPA Method 8270A and 8270B
- organochlorine pesticides and polychlorinated biphenyls by EPA Method 8081
- extractable TPH by EPA Method 8015 (CA LUFT modified)
- purgeable TPH by EPA Method 8015 (CA LUFT modified)
- VOCs by EPA Method 8260A

Also, for analysis at the TAA 314 site, the Selected Ion Monitoring (SIM) technique was used on the following four semivolatile organic compounds (SVOCs) to achieve detection limits lower than the Region IX PRGs (U.S. EPA, 1998):

- benzo(a)pyrene
- dibenzo(a,h)anthracene
- n-nitrosodi-n-propylamine
- bis(2-chloroethyl)ether

SIM is a recognized gas chromatograph/mass spectrometer technique used to lower detection limits for organic compounds. As specified in EPA Method 8270B, SVOCs are introduced into the gas chromatograph by direct injection. The components of the sample are separated by the gas chromatograph and detected by the mass spectrometer, which provides both qualitative and quantitative information.

For each component or compound separated by the gas chromatograph, the mass spectrometer produces a characteristic mass spectrum. The mass spectrometer ionizes the sample molecules and separates any resulting fragments by mass-to-charge ( $m/z$ ) ratios. The fragmentation pattern is used to determine the structure of the original molecule. The intensity of one or more of the fragments is used to quantitate the identified compound.

Upon identification of a target compound by comparison of the acquired mass spectrum with the mass spectrum of a standard, EPA Method 8270B specifies a fragment or characteristic ion to use for quantitation of the analyte. Method 8270B requires that the mass spectrometer scan from 35 to 500 amu ( $m/z$ ) every 1 second or less. In SIM, the entire mass range is not scanned. Typically, only a few  $m/z$  ratios are monitored. As a result, the mass spectrometer is able to collect more data from a specific  $m/z$  ratios, resulting in an improved signal-to-noise ratio, which in turn improves detection limits. There is, however, a practical limitation to the number of  $m/z$  ratios that can be monitored at one time so that the total scan time does not exceed 1 second. As a result, the number of compounds that can be measured in a single SIM analysis is limited.

### ***4.3 Laboratory Analytical Results***

This section summarizes and assesses the analytical results of sampling performed at the TAA 314 site. Confirmation soil samples analytical results, along with a comparison to MCAS El Toro background concentrations and PRG values are presented in Table 4-2, Confirmation Soil Sample Analytical Results - TAA 314 Site. The hard copies of analytical results obtained from VOC Analytical Services is included in Appendix H, Laboratory Analytical Results.

#### ***4.3.1 Confirmation Soil Sample Analytical Results***

**Volatile Organic Compounds** — No VOCs were detected above the laboratory reporting limits in all 9-confirmation soil samples collected at TAA 314 site.

**Semivolatile Organic Compounds** — No SVOCs were detected above the laboratory reporting limits in all 9-confirmation soil samples collected from TAA 314 site. However, for the laboratory reporting limits to meet the PRGs, the following four SVOCs were measured with SIM analysis:

- benzo(a)pyrene
- dibenzo(a,h)anthracene
- n-nitrosodi-n-propylamine
- bis(2-chloroethyl)ether

The OHM criterion for acceptance of this SIM data was that the laboratory detection limit must be equal or less than half the PRG. In summary, no SVOCs were detected from all confirmation soil samples above the EPA Region IX PRGs and the laboratory reporting limits.

**Total Petroleum Hydrocarbons** — TPH as diesel, TPH as gasoline, and Jet Propellant Type 5 were not detected above the laboratory reporting limits in all the 9-confirmation soil samples.

**Target Analyte List Metals** — Thallium (at 3.8J mg/kg) was the only metal compound detected above the established MCAS El Toro background levels (0.53 mg/kg).

**Pesticides** — Five pesticide compounds were detected above the laboratory reporting limits but were below the residential PRGs. These compounds (4,4-dichlorodiphenylethene [DDE], Aldrin, Heptachlor, alpha-chlordane, and gamma-chlordane) were included in the risk calculations. Heptachlor, alpha-chlordane, and gamma-chlordane were below the Station's established background levels.

Also, laboratory detection limits for the pesticide endosulfan I at the TAA 314 site exceeded the established MCAS El Toro background levels (BNI, 1996). However, the background concentration calculated and reported by BNI is based upon only two positive results and 45 non-detected results. Also, the positive results in the BNI report appear to be estimated results (J-flags missing). The detection limits reported (for the non-detect samples) are in the 1 to 2 microgram per kilogram ( $\mu\text{g}/\text{kg}$ ) ranges; however, the background concentration was calculated and reported to be  $0.179 \mu\text{g}/\text{kg}$ . The endosulfan I detection limits reported in this document for TAA 314 are below the PRGs. The laboratory reporting limit for endosulfan sulfate ( $8.2 \text{ U } \mu\text{g}/\text{kg}$ ) in one sample identified as 18609-632 (TAA314-SB-C at 3 feet bgs) exceeded the background concentration ( $4.21 \mu\text{g}/\text{kg}$ ) but not the PRG.

Analyte Name	Highest Concentration Detected above Laboratory Reporting Limit (mg/kg)	MCAS El Toro Established Background Concentration (mg/kg)	PRG Values Residential / Industrial (mg/kg)
4,4'-DDE	0.0079	0.233	1.7E+00 / 1.3E+00
Aldrin	0.012	0.272	1.7E+00 / 1.3E+01
Heptachlor	0.032	NE	9.9E-02 / 6.7E-01
Alpha-Chlordane	0.093	0.018	1.6E+00 / 1.2E+01
Gamma-Chlordane	0.091	0.018	1.6E+00 / 1.2E+01

*Explanation:*

*mg/kg – milligrams per kilogram*

*NE - No Entry or Not Established*

## 4.4 Data Quality Assessment

The analytical data generated for the analysis of the samples collected in connection with the assessment of TAA 314 were reviewed and validated with respect to the QA/QC parameters specified in the work plan. The following were evaluated:

- EPA-recommended holding times
- cooler condition upon receipt by the laboratory
- initial and continuing calibration standards
- method blanks
- surrogate recoveries
- MS/MSD recoveries
- laboratory control samples (LCS) recoveries

### 4.4.1 Soil Samples

All samples were prepared and analyzed within EPA-recommended holding times. The sample cooler was received intact and within the required temperature range of 4±2 degrees Celsius. Any sample results associated with QC parameters that were out of compliance with the work plan were flagged and annotated in Table 4-2. All data are useable as qualified.

## 4.5 Data Validation

This section addresses the validity and quality of the data collected from the TAA 314 site. Analytical data were reviewed and validated in accordance with the EPA *National Functional Guidelines for Organic and Inorganic Data Review* (EPA, 1994). Laboratory Data Consultants (LDC), an independent data validation company, performed Level III validation on these data. A hard copy of the LDC report is provided in Appendix I.

Laboratory analytical data were subjected to a four-stage process of evaluation: completeness checks, verification of hard copy and electronic results, validation of the data, and final evaluation based on the professional judgment of the project chemist.

The data were qualified by LDC to indicate whether the data have been affected by any deviation from the analytical protocols established in the Draft Supplemental Work Plan (OHM, 1997). Unusable data was qualified with an "R" (rejected). All other results were either unqualified (no flag), nondetected ("U" flag), nondetected with uncertainty in the report detection limits ("UJ" flag), or detected with uncertainty in the reported concentration ("J" flag).

### 4.5.1 Analytical Quality Control Program

This section provides a description of the field and laboratory QC sample results, which were used to evaluate the precision, accuracy, representativeness, completeness, and comparability.

**Precision** — Precision was evaluated based on the QC results submitted from the field and from the laboratory. The calculated relative percent difference (RPD) of MS/MSDs, laboratory control sample duplicates (LCSDs), and the field duplicate pair provided information on the precision of sampling and analytical procedures. RPDs for duplicate samples were not calculable when one or both results were not detected. The precision results for all the samples were within the required limits. RPD of 30 or less was calculated in the field duplicate samples 18609-704 and 18609-705.

**Accuracy** — Evaluation of the percent recovery of spiked analytes in MS/MSD samples, LCS/LCSDs, and surrogates provide information on accuracy. In addition, the initial and continuing calibration results provided information on analytical accuracy. The accuracy results for all samples were within the required limits with the following exceptions:

- Relative response factor (RRF) for acetone in the initial calibration was below the method criteria. Associated samples, 18609-704, 18609-705, 18609-628, 18609-629, 18609-630, 18609-631, 18609-632, and 18609-633 were estimated and flagged with 'UJ' since acetone was not detected in the sample.
- The RRF for vinyl acetate in the initial calibration was below the method criteria. However, it was not detected in the associated samples, 18609-628, 18609-629, 18609-630, 18609-631, 18609-632, 18609-633, 18609-704, 18609-705, and 18609-706; therefore, the compound was estimated and flagged with 'UJ'.

- The RRF in the continuing calibration for acetone, vinyl acetate, and 2-butanone were outside of the method acceptance limit. These compounds are flagged as 'UJ' since they were not detected in the samples 18609-628, 18609-629, 18609-630, 18609-631, 18609-633, 18609-632, 18609-704, 18609-705, and 18609-706.
- Continuing calibration RRF for chloroethane did not meet a method criteria, and was not detected in the associated samples; therefore, samples numbers, 18609-629, 18609-631, and 18609-18609-633 were flagged as 'UJ'.
- 4-Methyl-2-pentanone in the samples 18609-704, 18609-705, and 18609-706 was flagged as 'UJ' because continuing calibration RRF was outside the acceptance limit and was not detected in the samples.
- Percent difference (%D) in a continuing calibration for 2-hexanone was outside the method acceptance limits. Since it was not detected in the associated sample numbers 18609-628, 18609-629, 18609-630, 18609-631 18609-632, 18609-633, 18609-704, 18609-705, and 18609-706; they were flagged as 'UJ'.
- The %D in a continuing calibration for ethylbenzene, chloroethane, carbon disulfide and 2-hexanone did not meet the method criteria, and the compounds were not detected in the following samples, they were flagged as 'UJ': 18609-629, 18609-631, and 18609-633.
- The %D in a continuing calibration for alpha-BHC for the samples 18609-704 and 18609-705 was outside the acceptance limit, therefore, was flagged as 'J'.

**Representativeness** — Representativeness was assessed through the evaluation of method blank and trip blank samples. Target analytes were not detected in the method and trip blank samples with the following exception:

- Acetone in the method blank was found above the reporting limit; therefore, sample 18609-reporting limits were raised to 58 µg/kg and flagged with 'U'.
- Reporting limits for Di-n-butylphthalate in the samples 18609-628, 18609-630, and 18609-632 were raised to 310, 280, and 260 µg/kg, respectively and flagged with 'U' due to the compound was detected in the method blank.
- TPH as gasoline of 0.069 mg/L, 2- Hexanone of 1.1 µg/L, Acetone of 38 µg/L, Methyl ethyl ketone of 33 µg/L were detected in the sample 18609-708, which was a rinsate sample.

**Completeness** — Completeness was evaluated in two criteria. The first criterion was assuring that all analytical requests were met, samples were received in the proper condition, and all analytes were performed within the technical holding times. The second criterion was evaluating the analytical completeness by calculating the percent of acceptable analytes. The completeness parameters are:

- the completeness goal for holding times is 100 percent

- the goal for sample collection and analysis frequency of duplicate and MS/MSD samples was 10 percent and 5 percent, respectively
- the percent analytical completeness goal was 90 percent

All samples were extracted and analyzed within the appropriate holding times. No duplicate samples were collected. The precision from field duplicates will be used qualitatively to assess the heterogeneity of the soil. The percent analytical completeness goal is based on a project-wide sampling program and cannot be assessed on a site-by-site basis.

**Comparability** — To ensure comparability, sampling was performed using standardized procedures. Laboratory procedures follow EPA analytical methods and the CA LUFT Manual guidelines. All soil samples were reported on a dry weight basis. The data were then evaluated for comparability of reporting detection limits (RDLs) and associated dilution factors. RDLs were elevated when samples required dilution to quantify target compounds within the linear range of the instrument or when there was sample matrix interference.

All reporting limits were achieved for VOCs, TPH-purgeable, TPH-extractable, metals, SVOCs, pesticides, polychlorinated biphenyls, pH, and cyanide by the laboratory.

**Summary** — All data associated with the TAA 314 site were usable and acceptable as qualified. Overall precision and accuracy were met. The analytical results and associated qualifiers are summarized in Table 4-2.

# ***Section 5***

## ***Risk Characterization and Hazard Index Calculation***

This section (1) briefly describes the approach used to estimate risk, and (2) summarizes the baseline screening level risk assessment results for the TAA 314 site. A screening level risk assessment for human health was conducted for TAA 314 following the guidance provided in the EPA Region IX PRGs Memorandum (EPA, 1998). The results of confirmation soil sampling conducted at the TAA were used to calculate risks.

### ***5.1 Physical Characteristics of the TAA 314 Site***

Based on the review of the boring logs for groundwater monitoring wells 08\_DGMW74 and 18\_PS8, the subsurface lithology at TAA 314 site consists of predominantly silty sand with layers of clayey sand from ground surface to first encountered groundwater. The principal aquifer is present at a depth of approximately 103 feet bgs. The regional groundwater flow direction in the area of site is generally to the west-northwest (BNI, 1997).

### ***5.2 Exposure Assessment***

The TAA 314 was a fuel locker area for storage of hazardous materials under an industrial land use exposure scenario. The Station is preparing for closure in July 1999 in accordance with the Base Closure and Realignment Act of 1993 (BRAC III). The TAA 314 site is located within an area that has been tentatively identified as part of the cargo area according to the El Toro Community Reuse Plan (County of Orange, 1997) as shown in Appendix J, Tentative Reuse Parcel Location of TAA 314. The future land use for the site is expected to remain industrial as part of the cargo area for the proposed airport facility as shown in proposed airport and open space plan Year 2020 Concept C (County of Orange, 1998).

There is limited exposure to soil because there is a concrete surface over most of the site. The cover is expected to remain during the future land use as part of the cargo area. However, for screening purposes, the ingestion, dermal contact, and inhalation exposure pathways are assumed to be complete as if there were no cover. Should the screening fail, further evaluation of the exposure pathways would be required. Figure 5-1 presents the TAA 314 site conceptual model.

Under an industrial and/or residential land use scenario at TAA 314, humans (workers) could be potentially exposed to TAA 314 surrounding soil by ingestion, dermal contact, or inhalation of dust or volatilized contaminants. These are the same exposure pathways evaluated by the EPA PRGs (EPA, 1998). Figure 5-2, Potential Migration Pathways, Exposure Routes and Receptors, presents the potential migration pathways at the TAA 314 site.

### 5.3 Toxicity Assessment

The PRGs incorporate the toxicity values from the Integrated Risk Information System, the Health Effects Assessment Summary Tables, and the National Center for Environmental Assessment. Cancer PRGs incorporate cancer toxicity values and the noncancer PRGs incorporate the toxicity values for chronic health effects other than cancer (EPA, 1998). Both cancer risk and noncancer hazards were evaluated in this screening risk assessment.

### 5.4 Risk Characterization

The PRGs are concentrations calculated using standard exposure factors that are protective of humans, including sensitive groups, over a lifetime. These PRG concentrations pose acceptable cancer risk or non-cancer hazard under the exposure scenarios evaluated. Generally, a cancer risk of  $10^{-6}$  to  $10^{-4}$  and a non-cancer hazard index of 1 or less are considered acceptable levels of exposure. The PRG concentrations are calculated to at a cancer risk level of  $1 \times 10^{-6}$  and a non-cancer hazard index of 1.

Cancer risk is calculated by dividing the site concentration by the PRG for each chemical. The ratios are added and multiplied by  $10^{-6}$ . The hazard index is calculated by dividing the site concentration by the PRG for each chemical and adding the ratios.

The carcinogens detected in the soil at the TAA 314 site include; DDE, Aldrin, Heptachlor, alpha and gamma Chlordane, Arsenic and Chromium. All but Heptachlor and the alpha and gamma Chlordane were below the Station background concentrations (Table 5-1 and Table 5-2). The only carcinogen to exceed its residential PRG value was arsenic. However, the net cancer risk after subtracting background is less than  $10^{-6}$  or  $9 \times 10^{-8}$ .

The detected chemicals that could potentially contribute to non-cancer hazards include the organic carcinogens detected and the 12 metals listed in Table 5-1. The total hazard for all detected chemicals is 1.5. All the detected metals were less than background except for Thallium. Thallium did not exceed its PRG value but resulted in a hazard index of 0.73. The hazard index due to the pesticides that were detected above background was 0.12. The sum of the non-cancer hazards for chemicals detected above background was less than 1.0.

The site-related incremental cancer risk and non-cancer hazard index is acceptable for the following reasons:

- The net carcinogenic risk is less than  $10^{-6}$  for the residential scenario.
- The non-cancer hazard index for chemicals detected over background concentrations is less than 1.0 for the residential scenario.
- The residential scenario was evaluated as worst-case. The current and future industrial scenario, the cancer risk and non-cancer hazard would be even less.

## *Section 6*

# *Conclusions and Recommendations*

The following conclusions are based upon existing background information, previous field investigations, OHM's site visit, and the field soil sampling analytical results:

- The TAA 314 site was an area where a fuel locker was staged. The TAA 314 fuel locker was placed on a concrete-paved area. Approximately in November 1995, the fuel locker was removed and site was no longer used to store any hazardous materials. Also, an OWS 314C in the vicinity of TAA 314 was removed by OHM and OWS 314C site was closed by OCHCA in October 1997.
- OHM observed no visible stains, evidence of spills, or staining at the TAA 314 site during the site visits conducted in January 1996 and September 1997.
- OHM collected 9 confirmation soil samples at the TAA 314 site. Based on the review of analytical data, no indications of hazardous contaminants (i.e., previous spills) were found in the soil under or around the TAA 314 site. Therefore, the use of the fuel locker did not impact the soil at the TAA 314 site.
- No TPH, VOCs, SVOCs, pesticides, and metal compounds from all the 9 confirmation soil samples were detected above the Station's established background concentration. The few chemicals that were detected in the soil above the laboratory reporting limits or the PRG values were analyzed to determine the risk associated with their presence.
- The residential risk calculations for the TAA 314 site resulted in a site-related cancer risk less background risk of  $9.25 \times 10^{-8}$  and a site-related residential noncancer hazard index of 1.5, both of which are generally accepted levels of exposure.
- The TAA 314 (SWMU 269) is located within the boundary of IRP Site 24 – the VOC Source Area. The groundwater beneath TAA 314 (SWMU 269) has been impacted by chlorinated solvents believed to originate from the primary sources identified within IRP Site 24. Ground water conditions beneath TAA 314 (SWMU 269) will be addressed during the development of the Proposed Plan and Record of Decision for IRP Site 24 – the VOC Source Area.

The objectives of this project are considered to be achieved, since the TAA 314 site is no longer used for storage of hazardous materials or wastes and confirmation sampling analytical results verified that concentrations of contaminants were at or below acceptable background or health-risk based concentrations.

Based on the information provided, closure goals were achieved with respect to soil for TAA 314 site; therefore, TAA 314 (also known as SWMU 269) should be identified as "closed."

## *Section 7*

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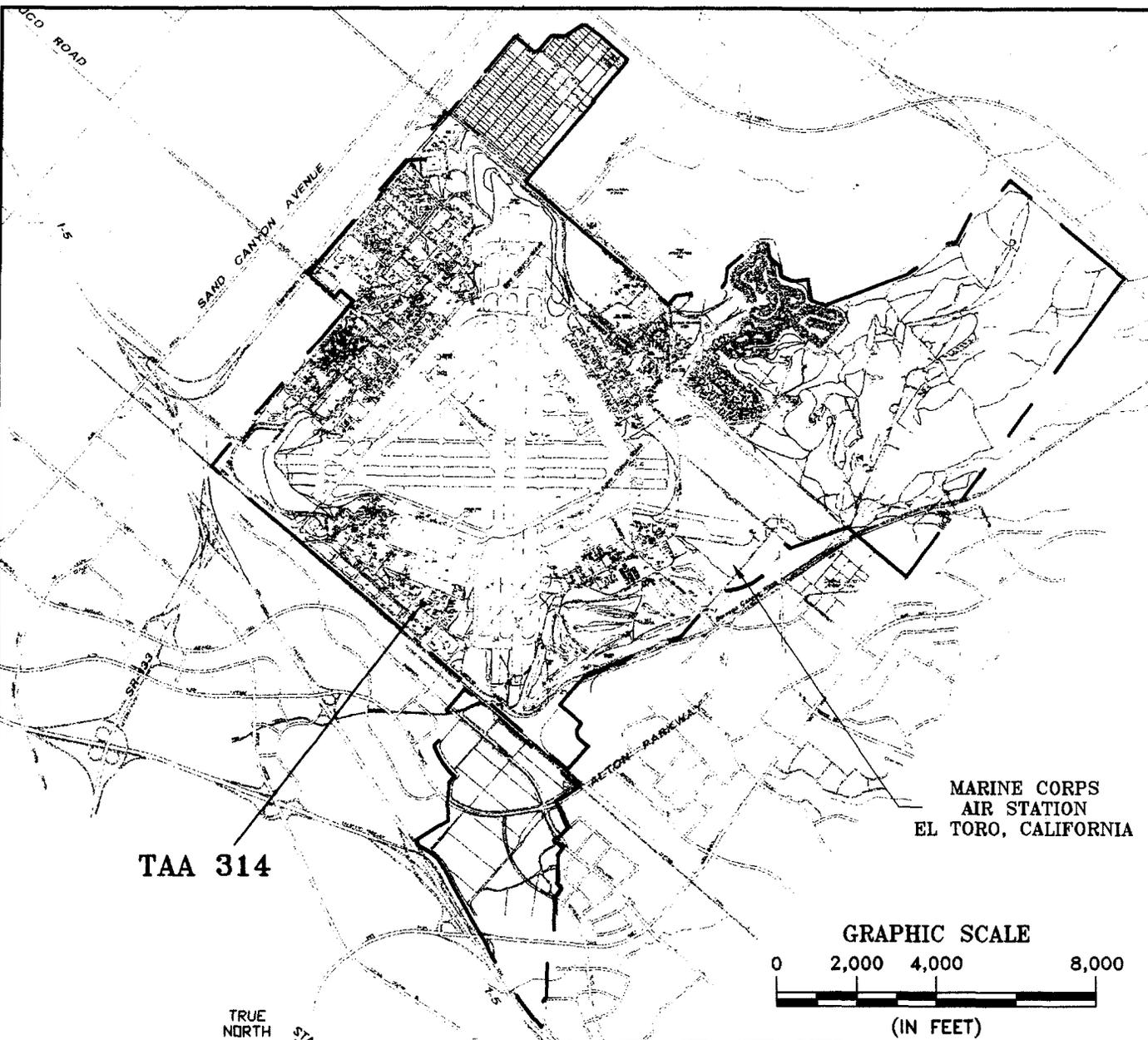
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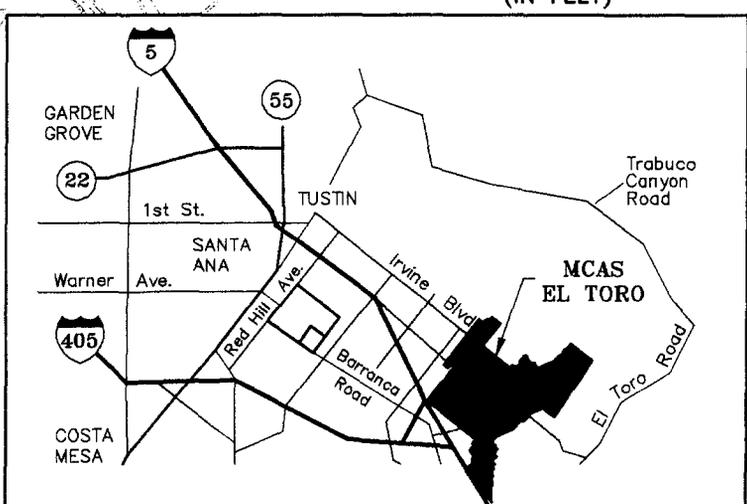
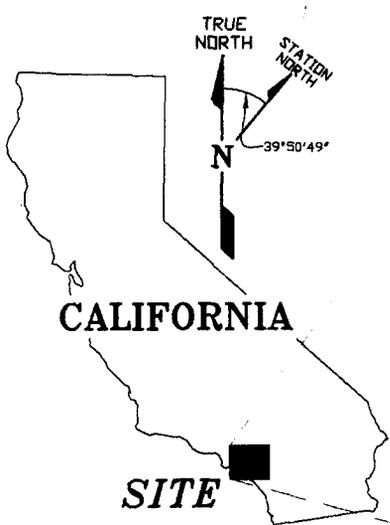
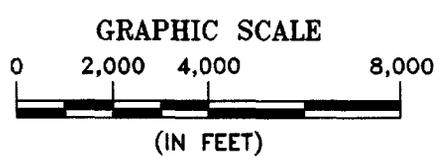
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# *Figures*



MARINE CORPS  
AIR STATION  
EL TORO, CALIFORNIA

TAA 314



Dec 22, 1998 - 11:11:02 G:\PROJECTS\18609\18609165.dwg

 **OHM Remediation Services Corp.**  
A Subsidiary of OHM Corporation  
SAN DIEGO, CA

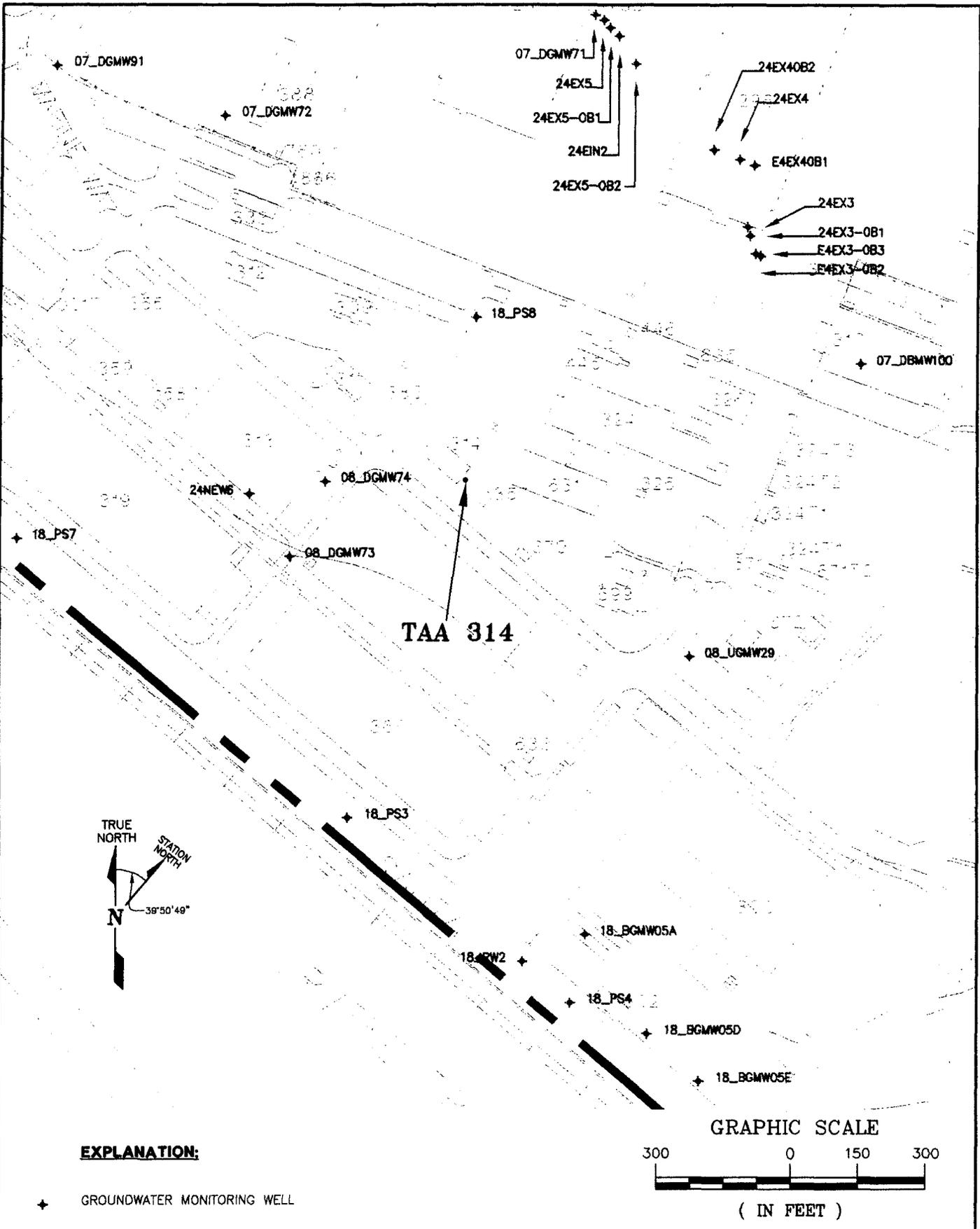
DRAWN BY: R. PIRMORADIAN DATE: 12/22/98  
CHECKED BY: DATE:  
APPROVED BY: *JR* DATE: 12/22/98  
PROJECT MANAGER: *W. Sells* DATE: 12/22/98

FACILITY LOCATION MAP  
TAA 314

MARINE CORPS AIR STATION  
EL TORO, CALIFORNIA

CONTRACT NAME: **SWDIV**

ALTOCAD FILE No. 18609165.DWG	PLOT SCALE 1=1	SHEET 1	OF 1	SCALE 1"=4,000'	DOCUMENT CONTROL No. SW5979	OHM PROJECT No. 18609	FIGURE No. FIG 1-1	REVISION 0
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**EXPLANATION:**

✦ GROUNDWATER MONITORING WELL

 **OHM Remediation Services Corp.**  
A Subsidiary of OHM Corporation  
SAN DIEGO, CA

DRAWN BY: R. PIRMORADIAN DATE: 12/22/98  
CHECKED BY: DATE: \_\_\_\_\_  
APPROVED BY: *DR* DATE: 12/22/98

LOCATION MAP  
TAA 314

CONTRACT NAME: **SWDIV**

PROJECT NUMBER: *1462/98* DATE: \_\_\_\_\_

MARINE CORPS AIR STATION  
EL TORO, CALIFORNIA

AUTOCAD FILE NO.: 18609166.DWG

PLOT SCALE: 1=1  
SHEET: 1 OF 1

SCALE: 1"=300'

DOCUMENT CONTROL NO.: SW5979

OHM PROJECT NO.: 18609

FIGURE NO.: FIG 1-2

REVISION: 0

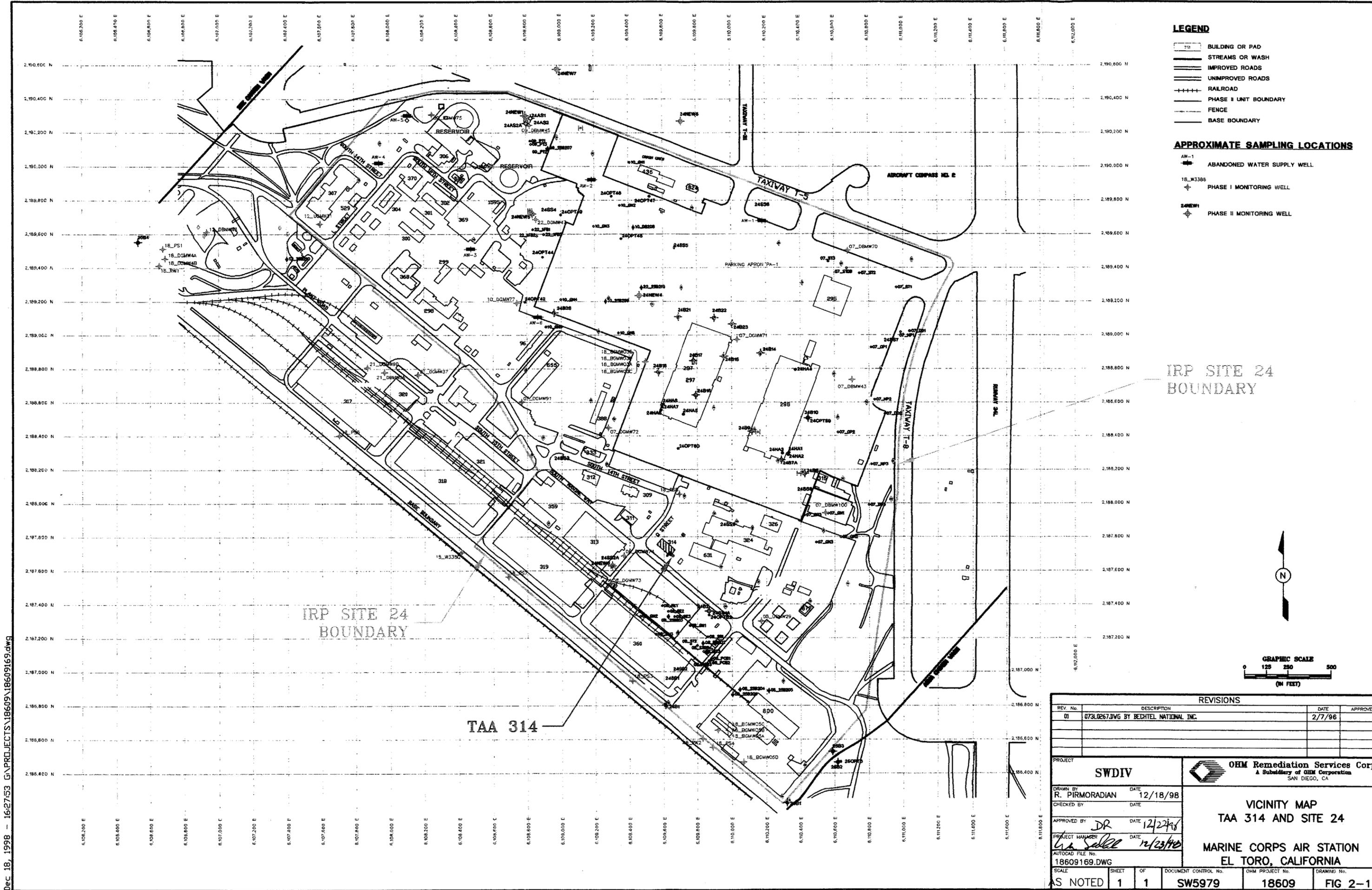
Dec 22, 1998 - 11:15:01 G:\PROJECTS\18609\18609166.dwg

**LEGEND**

- BUILDING OR PAD
- STREAMS OR WASH
- IMPROVED ROADS
- UNIMPROVED ROADS
- RAILROAD
- PHASE I UNIT BOUNDARY
- FENCE
- BASE BOUNDARY

**APPROXIMATE SAMPLING LOCATIONS**

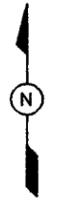
- AW-1  
ABANDONED WATER SUPPLY WELL
- 18\_W3386  
PHASE I MONITORING WELL
- 24NEW1  
PHASE II MONITORING WELL



IRP SITE 24  
BOUNDARY

IRP SITE 24  
BOUNDARY

TAA 314

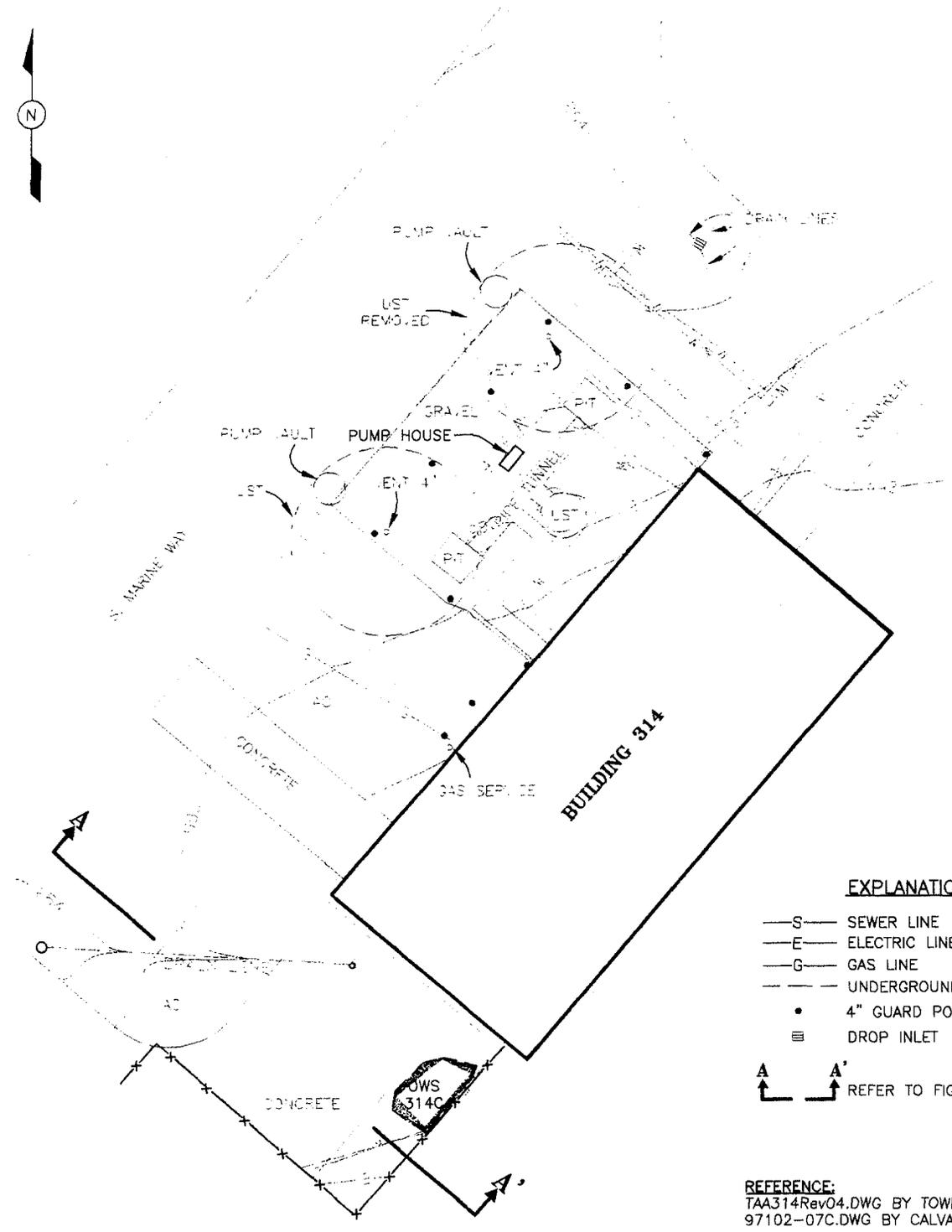


REVISIONS			
REV. No.	DESCRIPTION	DATE	APPROVED
01	073L0267.DWG BY BECHTEL NATIONAL INC.	2/7/96	

PROJECT <b>SWDIV</b>		 OHM Remediation Services Corp. A Subsidiary of OHM Corporation SAN DIEGO, CA	
DRAWN BY R. PIRMORADIAN	DATE 12/18/98	VICINITY MAP TAA 314 AND SITE 24  MARINE CORPS AIR STATION EL TORO, CALIFORNIA	
CHECKED BY	DATE		
APPROVED BY <i>DR</i>	DATE 12/27/98		
PROJECT MANAGER <i>John Salter</i>	DATE 12/23/98		
AUTOCAD FILE No. 18609169.DWG		SCALE AS NOTED	SHEET 1
OF 1	DOCUMENT CONTROL No. SW5979	OHM PROJECT No. 18609	DRAWING No. FIG 2-1

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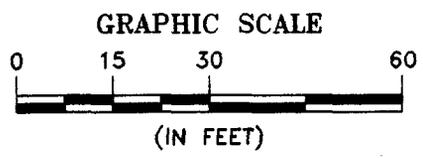
- S— SEWER LINE
- E— ELECTRIC LINE
- G— GAS LINE
- - - UNDERGROUND UTILITY
- 4" GUARD POST
- ≡ DROP INLET

REFER TO FIGURE 5-1

**REFERENCE:**  
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97102-07C.DWG BY CALVADA SURVEYING INC.

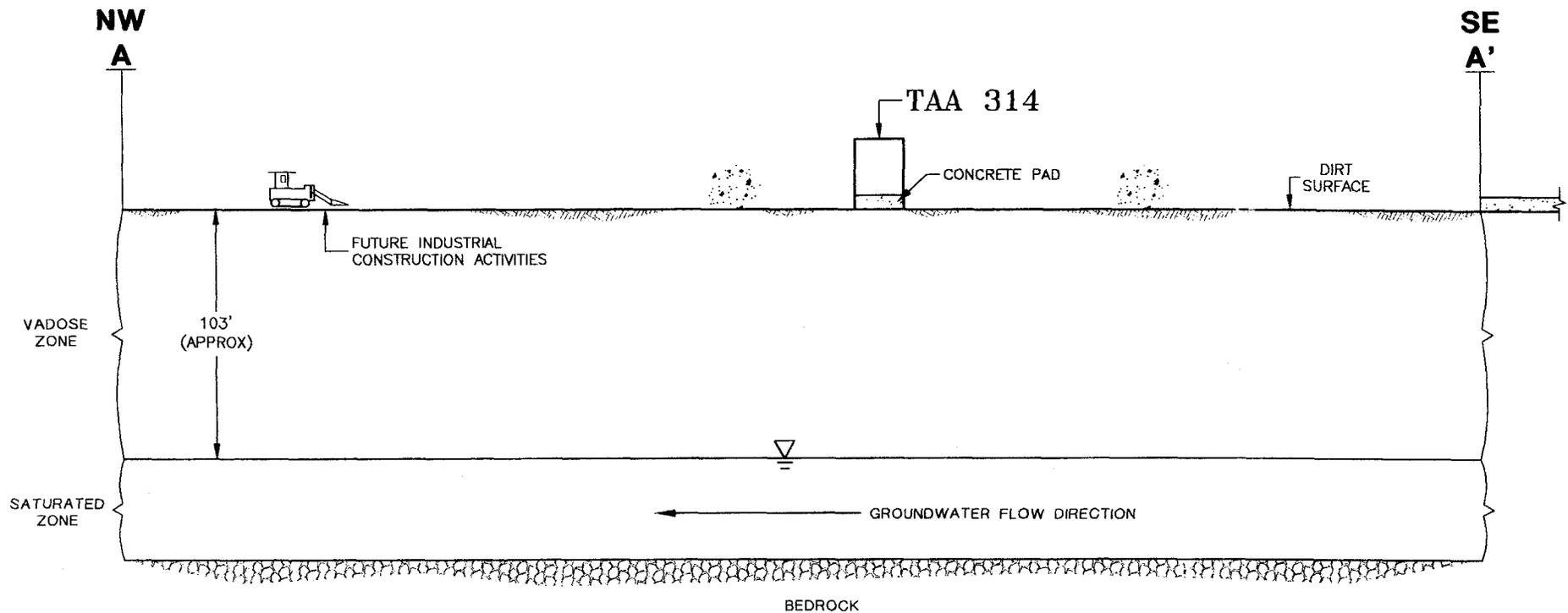
**SAMPLE COORDINATE LISTING**

#	NORTHING	EASTING	ELEV.	DESCRIPTION



Dec 22, 1998 - 14:55:46 G:\PROJECTS\18609\18609168.dwg

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	CHECKED BY		DATE				
	APPROVED BY	DR	DATE	12/22/98			
PROJECT MANAGER		DATE			<b>18609</b>		
CONTRACT NAME	<b>SWDIV</b>			DOCUMENT CONTROL No.		<b>FIG 3-1</b>	
AUTOCAD FILE No.	PLOT SCALE	SHEET	OF	SCALE			<b>0</b>
18609168.DWG	1=1	1	1	1"=30'			
OHM PROJECT No.					FIGURE No.		
SW5979					18609	FIG 3-1	0



**EXPLANATION:**

RECEPTORS:



WORKERS

PATHWAYS:



GROUNDWATER



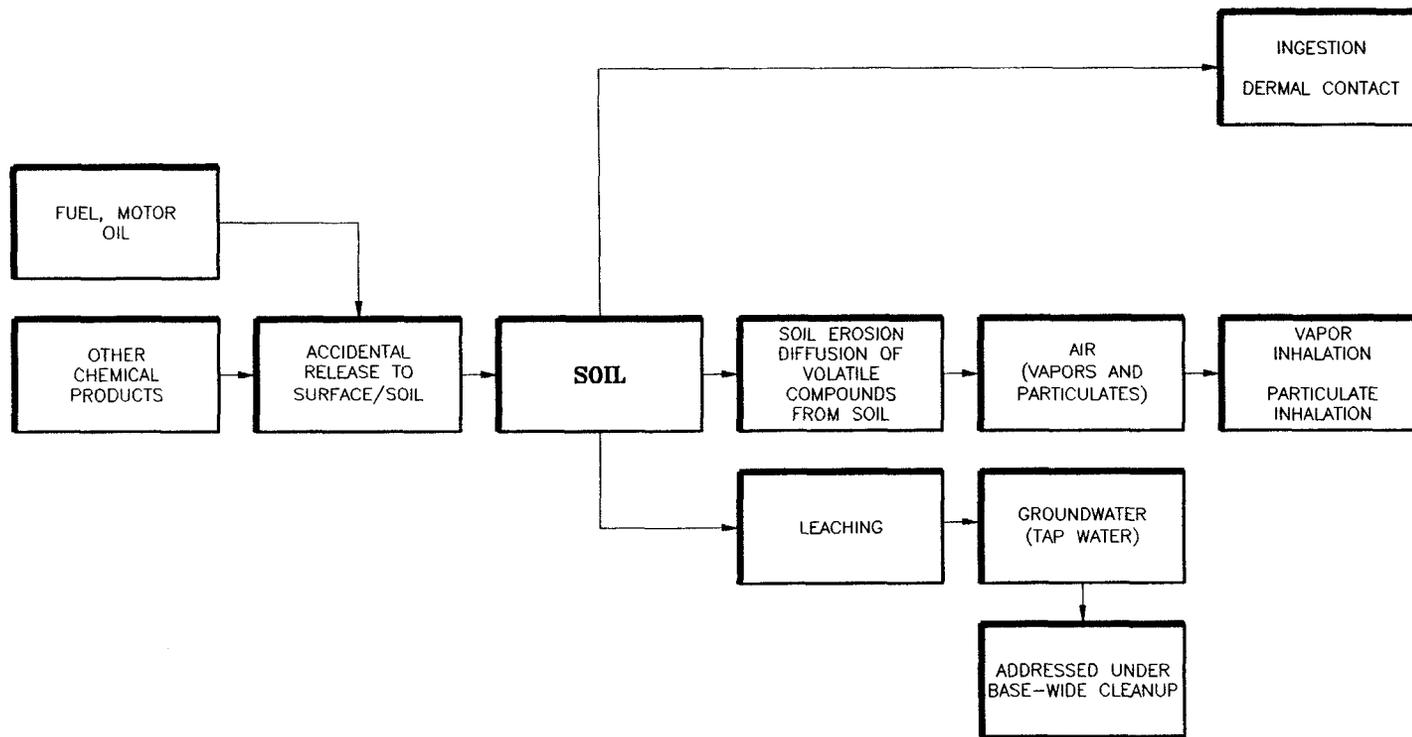
DUST

REFERENCE:  
103M2088.DWG

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	CHECKED BY	DATE						
	APPROVED BY <i>DK</i>	DATE 12/22/98						
PROJECT MANAGER <i>[Signature]</i>	DATE 12/23/98							
CONTRACT NAME <b>SWDIV</b>	AUTOCAD FILE No. 18609175.DWG	PLOT SCALE 1=1	SHEET 1	OF 1	SCALE AS NOTED	DOCUMENT CONTROL No. SW5979	OHM PROJECT No. 18609	FIGURE No. FIG 5-1

CHEMICAL SOURCES	PRIMARY RELEASE MECHANISM	SECONDARY SOURCE	SECONDARY RELEASE MECHANISM	EXPOSURE MEDIUM	EXPOSURE ROUTE
------------------	---------------------------	------------------	-----------------------------	-----------------	----------------

HUMAN RECEPTORS		
RESIDENT ADULT	RESIDENT CHILD	INDUSTRIAL
		X
		X
		X
		X



**EXPLANATION:**

X COMPLETE PATHWAY

REFERENCE:  
103C2089.DXF

 <b>OHM Remediation Services Corp.</b> A Subsidiary of OHM Corporation SAN DIEGO, CA		DRAWN BY R. PIRMORADIAN	DATE 12/22/98	<b>POTENTIAL MIGRATION PATHWAYS                  EXPOSURE ROUTES AND RECEPTORS                  TAA 314</b>			
		CHECKED BY	DATE				
CONTRACT NAME <b>SWDIV</b>		APPROVED BY <i>DR</i>	DATE 12/22/98			<b>MARINE CORPS AIR STATION                  EL TORO, CALIFORNIA</b>	
AUTOCAD FILE No. 18609174.DWG	PLOT SCALE 1=1	SHEET 1	OF 1	SCALE AS NOTED	DOCUMENT CONTROL No. SW5979		

# *Tables*

**Table 4 - 1**  
**Sample Collection Summary Log - TAA 314**

OHM Sample Number	Sample Location	Sample Depth	Sample Date	TPH AS DIESEL	TPH AS GASOLINE	TPH AS JP-5	EPA 8081	EPA 8260A	EPA 8270B	EPA 6010A
18609-628	TAA314-SBA	10/16/97	1.5	X	X	X	X	X	X	X
18609-629	TAA314-SBA	10/16/97	3					X		
18609-630	TAA314-SBB	10/16/97	1.5	X	X	X	X	X	X	X
18609-631	TAA314-SBB	10/16/97	3					X		
18609-632	TAA314-SBC	10/16/97	3	X	X	X	X	X	X	X
18609-633	TAA314-SBC	10/16/97	3					X		
18609-704	TAA314-SBD	10/20/97	1.5	X	X	X	X	X	X	X
18609-705	TAA314-SBD	10/20/97	2	X	X	X	X	X	X	X
18609-706	TAA314-SBD	10/20/97	3					X		

**Table 4 - 1**  
**Sample Collection Summary Log - TAA 314**

OHM Sample Number	Sample Location	Sample Depth	Sample Date	EPA 7060A	EPA 7421	EPA 7471A	EPA 7740	EPA 9010A	EPA 9045
18609-628	TAA314-SBA	10/16/97	1.5	X	X	X	X	X	X
18609-629	TAA314-SBA	10/16/97	3						
18609-630	TAA314-SBB	10/16/97	1.5	X	X	X	X	X	X
18609-631	TAA314-SBB	10/16/97	3						
18609-632	TAA314-SBC	10/16/97	3	X	X	X	X	X	X
18609-633	TAA314-SBC	10/16/97	3						
18609-704	TAA314-SBD	10/20/97	1.5	X	X	X	X	X	X
18609-705	TAA314-SBD	10/20/97	2	X	X	X	X	X	X
18609-706	TAA314-SBD	10/20/97	3						

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-628	18609-629	18609-630	18609-631	18609-632
Sample Location					TAA314-SBA	TAA314-SBA	TAA314-SBB	TAA314-SBB	TAA314-SBC
Date Collected					10/16/97	10/16/97	10/16/97	10/16/97	10/16/97
Sample Depth (feet below ground surface)					1.5	3	1.5	3	1.5
	Unit	Background	PRG Residential	PRG Industrial					
<b>CA LUFT 8015M</b>									
TPH as Gasoline	mg/kg	NE	NE	NE	12 U	NA	12 U	NA	12 U
TPH as Diesel	mg/kg	NE	NE	NE	12 U	NA	12 U	NA	12 U
TPH as JP-5	mg/kg	NE	NE	NE	12 U	NA	12 U	NA	12 U
<b>EPA 8081</b>									
4,4'-DDD	µg/kg	58.6	2400	19000	2.3 U	NA	2.3 U	NA	24 U
4,4'-DDE	µg/kg	233	1700	1300	2.3 U	NA	0.62 J	NA	7.9 J
4,4'-DDT	µg/kg	272	1700	13000	2.3 U	NA	2.3 U	NA	24 U
Aldrin	µg/kg	NE	26	180	2.3 U	NA	2.3 U	NA	12 J
alpha-BHC	µg/kg	NE	86	670	0.81 U	NA	0.81 U	NA	8.2 U
alpha-Chlordane	µg/kg	17.7	1600	12000	2.3 U	NA	4.8	NA	93 J B
Aroclor-1016	µg/kg	NE	3400	63000	38 U	NA	38 U	NA	390 U
Aroclor-1221	µg/kg	NE	200	1300	38 U	NA	38 U	NA	390 U Y*
Aroclor-1232	µg/kg	NE	200	1300	38 U	NA	38 U	NA	390 U Y*
Aroclor-1242	µg/kg	NE	200	1300	38 U	NA	38 U	NA	390 U Y*
Aroclor-1248	µg/kg	NE	200	1300	38 U	NA	38 U	NA	390 U Y*
Aroclor-1254	µg/kg	NE	970	18000	38 U	NA	38 U	NA	390 U
Aroclor-1260	µg/kg	NE	200	1300	38 U	NA	38 U	NA	390 U Y*
Beta-BHC	µg/kg	NE	300	2300	2.3 U	NA	2.3 U	NA	24 U
Delta-BHC	µg/kg	NE	NE	NE	2.3 U	NA	2.3 U	NA	24 U
Dieldrin	µg/kg	118	28	190	2.3 U	NA	2.3 U	NA	24 U
Endosulfan I	µg/kg	0.179	330000	6400000	0.81 U B	NA	0.81 U B	NA	8.2 U B
Endosulfan II	µg/kg	10.6	330000	6400000	2.3 U	NA	2.3 U	NA	24 U B
Endosulfan sulfate	µg/kg	4.21	NE	NE	2.3 U	NA	2.3 U	NA	24 U B
Endrin	µg/kg	19.9	16000	320000	2.3 U	NA	2.3 U	NA	24 U B
Endrin aldehyde	µg/kg	41.7	NE	NE	2.3 U	NA	2.3 U	NA	24 U
Endrin ketone	µg/kg	NE	NE	NE	NA	NA	NA	NA	NA
gamma-BHC	µg/kg	NE	420	3200	2.3 U	NA	2.3 U	NA	24 U

Table 4 - 2

## Confirmation Soil Sample Analytical Results - TAA 314

OHM Sample Number					18609-628	18609-629	18609-630	18609-631	18609-632
Sample Location					TAA314-SBA	TAA314-SBA	TAA314-SBB	TAA314-SBB	TAA314-SBC
Date Collected					10/16/97	10/16/97	10/16/97	10/16/97	10/16/97
Sample Depth (feet below ground surface)					1.5	3	1.5	3	1.5
	Unit	Background	PRG Residential	PRG Industrial					
gamma-Chlordane	µg/kg	18	1600	12000	2.3 U	NA	5.5	NA	91 J B
Heptachlor	µg/kg	NE	99	670	2.3 U	NA	2.3 U	NA	32 J
Heptachlor epoxide	µg/kg	NE	49	330	2.3 U	NA	2.3 U	NA	24 U
Methoxychlor	µg/kg	NE	270000	5300000	2.3 U	NA	2.3 U	NA	24 U
Toxaphene	µg/kg	NE	400	2700	NA	NA	NA	NA	NA
<b>EPA 8260A</b>									
1,1,1-Trichloroethane	µg/kg	NE	680000	1400000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
1,1,2,2-Tetrachloroethane	µg/kg	NE	360	870	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
1,1,2-Trichloroethane	µg/kg	NE	820	1900	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
1,1-Dichloroethane	µg/kg	NE	570000	2000000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
1,1-Dichloroethene	µg/kg	NE	52	120	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
1,2-Dichloroethane	µg/kg	NE	340	760	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
1,2-Dichloropropane	µg/kg	NE	340	760	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
2-Butanone (MEK)	µg/kg	NE	6900000	27000000	58 UJ	58 U	58 UJ	57 U	59 UJ
2-Chloroethyl vinyl ether	µg/kg	NE	NE	NE	58 U	58 U	58 U	57 U	59 U
2-Hexanone	µg/kg	NE	NE	NE	58 UJ	58 UJ	58 UJ	57 U	59 UJ
4-Methyl-2-pentanone (MIBK)	µg/kg	NE	750000	2800000	58 U	58 U	58 U	57 U	59 U
Acetone	µg/kg	NE	1400000	6100000	58 UJ	58 UJ	58 UJ	57 UJ	59 UJ
Benzene	µg/kg	NE	620	1400	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Bromodichloromethane	µg/kg	NE	980	2300	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Bromoform	µg/kg	NE	56000	380000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Bromomethane	µg/kg	NE	3800	13000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Carbon disulfide	µg/kg	NE	350000	1200000	5.8 U	5.8 UJ	5.8 U	5.7 U	5.9 U
Carbon tetrachloride	µg/kg	NE	230	520	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Chlorobenzene	µg/kg	NE	54000	180000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Chloroethane	µg/kg	NE	NE	NE	5.8 U	5.8 UJ	5.8 U	5.7 U	5.9 U
Chloroform	µg/kg	NE	240	520	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Chloromethane	µg/kg	NE	1200	2600	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-628	18609-629	18609-630	18609-631	18609-632
Sample Location					TAA314-SBA	TAA314-SBA	TAA314-SBB	TAA314-SBB	TAA314-SBC
Date Collected					10/16/97	10/16/97	10/16/97	10/16/97	10/16/97
Sample Depth (feet below ground surface)					1.5	3	1.5	3	1.5
	Unit	Background	PRG Residential	PRG Industrial					
cis-1,2-Dichloroethene	µg/kg	NE	42000	150000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
cis-1,3-Dichloropropene	µg/kg	NE	81	180	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Dibromochloromethane	µg/kg	NE	5300	36000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Ethylbenzene	µg/kg	NE	230000	230000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Methyl tert-butyl ether (MTBE)	µg/kg	NE	NE	NE	12 U	12 UJ	12 U	11 U	12 U
Methylene chloride	µg/kg	NE	8500	20000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Styrene	µg/kg	NE	1700000	1700000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Tetrachloroethene	µg/kg	NE	4700	16000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Toluene	µg/kg	NE	520000	520000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
trans-1,2-Dichloroethene	µg/kg	NE	62000	210000	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
trans-1,3-Dichloropropene	µg/kg	NE	81	180	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Trichloroethene	µg/kg	NE	2700	6100	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Vinyl acetate	µg/kg	NE	420000	1400000	12 UJ	12 UJ	12 UJ	11 UJ	12 UJ
Vinyl Chloride	µg/kg	NE	21	48	5.8 U	5.8 U	5.8 U	5.7 U	5.9 U
Xylenes (total)	µg/kg	NE	210000	210000	17 U	17 U	17 U	17 U	18 U
<b>EPA 8270B</b>									
1,2,4-Trichlorobenzene	µg/kg	NE	480000	1700000	380 U	NA	380 U	NA	390 U
1,2-Dichlorobenzene	µg/kg	NE	370000	370000	380 U	NA	380 U	NA	390 U
1,3-Dichlorobenzene	µg/kg	NE	41000	140000	380 U	NA	380 U	NA	390 U
1,4-Dichlorobenzene	µg/kg	NE	3000	7300	380 U	NA	380 U	NA	390 U
2,4,5-Trichlorophenol	µg/kg	NE	5500000	11000000	380 U	NA	380 U	NA	390 U
2,4,6-Trichlorophenol	µg/kg	NE	40000	270000	380 U	NA	380 U	NA	390 U
2,4-Dichlorophenol	µg/kg	NE	160000	3200000	380 U	NA	380 U	NA	390 U
2,4-Dimethylphenol	µg/kg	NE	1100000	21000000	380 U	NA	380 U	NA	390 U
2,4-Dinitrophenol	µg/kg	NE	110000	2100000	970 U	NA	970 U	NA	980 U
2,4-Dinitrotoluene	µg/kg	NE	110000	2100000	380 U	NA	380 U	NA	390 U
2,6-Dinitrotoluene	µg/kg	NE	55000	1100000	380 U	NA	380 U	NA	390 U
2-Chloronaphthalene	µg/kg	NE	3700000	24000000	380 U	NA	380 U	NA	390 U

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-628	18609-629	18609-630	18609-631	18609-632
Sample Location					TAA314-SBA	TAA314-SBA	TAA314-SBB	TAA314-SBB	TAA314-SBC
Date Collected					10/16/97	10/16/97	10/16/97	10/16/97	10/16/97
Sample Depth (feet below ground surface)					1.5	3	1.5	3	1.5
	Unit	Background	PRG Residential	PRG Industrial					
2-Chlorophenol	µg/kg	NE	59000	240000	380 U	NA	380 U	NA	390 U
2-Methyl-4,6-dinitrophenol	µg/kg	NE	NE	NE	970 U	NA	970 U	NA	980 U
2-Methylnaphthalene	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
2-Methylphenol	µg/kg	NE	2700000	53000000	380 U	NA	380 U	NA	390 U
2-Nitroaniline	µg/kg	NE	3300	64000	380 U	NA	380 U	NA	390 U
2-Nitrophenol	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
3,3'-Dichlorobenzidine	µg/kg	NE	990	6700	380 U	NA	380 U	NA	390 U
3-Methyl-4-chlorophenol	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
3-Nitroaniline	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
4-Bromophenyl phenyl ether	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
4-Chloroaniline	µg/kg	NE	220000	4300000	380 U	NA	380 U	NA	390 U
4-Chlorophenyl phenyl ether	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
4-Methylphenol	µg/kg	NE	270000	5300000	380 U	NA	380 U	NA	390 U
4-Nitroaniline	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
4-Nitrophenol	µg/kg	NE	3400000	66000000	970 U	NA	970 U	NA	980 U
Acenaphthene	µg/kg	NE	2600000	28000000	380 U	NA	380 U	NA	390 U
Acenaphthylene	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
Anthracene	µg/kg	NE	14000000	220000000	380 U	NA	380 U	NA	390 U
Benzo[a]anthracene	µg/kg	NE	560	3600	380 U	NA	380 U	NA	390 U
Benzo[a]pyrene	µg/kg	NE	56	360	38 U	NA	38 U	NA	39 U
Benzo[b]fluoranthene	µg/kg	NE	560	3600	380 U	NA	380 U	NA	390 U
Benzo[ghi]perylene	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
Benzo[k]fluoranthene	µg/kg	NE	56000	36000	380 U	NA	380 U	NA	390 U
Bis (2-chloroethoxy)methane	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
Bis (2-chloroethyl)ether	µg/kg	NE	180	560	38 U	NA	38 U	NA	39 U
Bis (2-chloroisopropyl)ether	µg/kg	NE	2500	7400	380 U	NA	380 U	NA	390 U
Bis (2-ethylhexyl)phthalate	µg/kg	NE	32000	210000	380 U	NA	380 U	NA	390 U
Butyl benzyl phthalate	µg/kg	NE	930000	930000	380 U	NA	380 U	NA	390 U

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-628	18609-629	18609-630	18609-631	18609-632
Sample Location					TAA314-SBA	TAA314-SBA	TAA314-SBB	TAA314-SBB	TAA314-SBC
Date Collected					10/16/97	10/16/97	10/16/97	10/16/97	10/16/97
Sample Depth (feet below ground surface)					1.5	3	1.5	3	1.5
	Unit	Background	PRG Residential	PRG Industrial					
Chrysene	µg/kg	NE	6100	360000	380 U	NA	380 U	NA	390 U
Di-n-butyl phthalate	µg/kg	NE	5500000	110000000	380 U	NA	380 U	NA	390 U
Di-n-octyl phthalate	µg/kg	NE	1100000	10000000	380 U	NA	380 U	NA	390 U
Dibenz[a,h]anthracene	µg/kg	NE	56	360	38 U	NA	38 U	NA	39 U
Dibenzofuran	µg/kg	NE	210000	3200000	380 U	NA	380 U	NA	390 U
Diethyl phthalate	µg/kg	NE	44000000	100000000	380 U	NA	380 U	NA	390 U
Dimethyl phthalate	µg/kg	NE	100000000	1000000000	380 U	NA	380 U	NA	390 U
Fluoranthene	µg/kg	NE	2000000	37000000	380 U	NA	380 U	NA	390 U
Fluorene	µg/kg	NE	1800000	22000000	380 U	NA	380 U	NA	390 U
Hexachlorobenzene	µg/kg	NE	280	1900	380 U Y*	NA	380 U Y*	NA	390 U Y*
Hexachlorobutadiene	µg/kg	NE	5700	38000	380 U	NA	380 U	NA	390 U
Hexachlorocyclopentadiene	µg/kg	NE	380000	7100000	380 U	NA	380 U	NA	390 U
Hexachloroethane	µg/kg	NE	32000	210000	380 U	NA	380 U	NA	390 U
Indeno[1,2,3-cd]pyrene	µg/kg	NE	560	3600	380 U	NA	380 U	NA	390 U
N-Nitrosodi-n-propylamine	µg/kg	NE	63	430	38 U	NA	38 U	NA	39 U
N-Nitrosodiphenylamine	µg/kg	NE	91000	610000	380 U	NA	380 U	NA	390 U
Naphthalene	µg/kg	NE	55000	190000	380 U	NA	380 U	NA	390 U
Nitrobenzene	µg/kg	NE	16000	100000	380 U	NA	380 U	NA	390 U
Pentachlorophenol	µg/kg	NE	2500	15000	770 U	NA	770 U	NA	780 U
Phenanthrene	µg/kg	NE	NE	NE	380 U	NA	380 U	NA	390 U
Phenol	µg/kg	NE	33000000	100000000	380 U	NA	380 U	NA	390 U
Pyrene	µg/kg	NE	1500000	26000000	380 U	NA	380 U	NA	390 U
<b>EPA 6010A</b>									
Aluminum	mg/kg	18600	75000	100000	10000	NA	10000	NA	18000
Antimony	mg/kg	4.5	30	750	5.8 U B	NA	5.8 U B	NA	5.9 U B
Barium	mg/kg	220	5200	100000	130	NA	120	NA	130
Beryllium	mg/kg	0.893	150	3400	0.67	NA	0.60	NA	0.76
Cadmium	mg/kg	11.4	9	930	0.58 U	NA	0.58 U	NA	0.59 U

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-628	18609-629	18609-630	18609-631	18609-632
Sample Location					TAA314-SBA	TAA314-SBA	TAA314-SBB	TAA314-SBB	TAA314-SBC
Date Collected					10/16/97	10/16/97	10/16/97	10/16/97	10/16/97
Sample Depth (feet below ground surface)					1.5	3	1.5	3	1.5
	Unit	Background	PRG Residential	PRG Industrial					
Calcium	mg/kg	67600	NE	NE	6900	NA	5500	NA	9400
Chromium	mg/kg	39.6	210	450	14	NA	13	NA	18
Cobalt	mg/kg	7.96	3300	29000	5.8	NA	5.7	NA	7.2
Copper	mg/kg	37.9	2800	70000	23	NA	14	NA	10.0
Iron	mg/kg	19000	22000	100000	16000	NA	16000	NA	21000 B
Magnesium	mg/kg	11100	NE	NE	5600	NA	5700	NA	7500
Manganese	mg/kg	574	3100	45000	240	NA	230	NA	270
Molybdenum	mg/kg	NE	370	9400	2.3 U	NA	2.3 U	NA	2.4 U
Nickel	mg/kg	71.1	150	37000	11.0	NA	12	NA	12
Potassium	mg/kg	5560	NE	NE	2900	NA	2900	NA	3800
Silver	mg/kg	0.65	370	9400	1.2 U B	NA	1.2 U B	NA	1.2 U B
Sodium	mg/kg	483	NE	NE	400	NA	240	NA	330
Thallium	mg/kg	0.53	5.2	130	5.8 U BY	NA	5.8 U BY	NA	5.9 U BY
Vanadium	mg/kg	102	520	13000	36	NA	35	NA	48
Zinc	mg/kg	104	22000	100000	56	NA	49	NA	52
<b>EPA 7060A</b>									
Arsenic	mg/kg	8.5	0.38*	3	3.5 XY	NA	3.1 XY	NA	3.1 XY
<b>EPA 7421</b>									
Lead	mg/kg	22.9	130	1000	3.5	NA	4.7	NA	3.9
<b>EPA 7471A</b>									
Mercury	mg/kg	0.41	22	560	0.093 U	NA	0.093 U	NA	0.094 U
<b>EPA 7740</b>									
Selenium	mg/kg	0.37	370	9400	0.58 U B	NA	0.58 U B	NA	0.59 U B
<b>EPA 9045</b>									
pH	pH units	NE	NE	NE	8.4	NA	8.5	NA	8.5

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-633	18609-704	18609-705	18609-706
Sample Location					TAA314-SBC	TAA314-SBD	TAA314-SBD (Dup)	TAA314-SBD
Date Collected					10/16/97	10/20/97	10/20/97	10/20/97
Sample Depth (feet below ground surface)					3	1.5	2	3
	Unit	Background	PRG Residential	PRG Industrial				
<b>CA LUFT 8015M</b>								
TPH as Gasoline	mg/kg	NE	NE	NE	NA	11 U	12 U	NA
TPH as Diesel	mg/kg	NE	NE	NE	NA	11 U	12 U	NA
TPH as JP-5	mg/kg	NE	NE	NE	NA	11 U	12 U	NA
<b>EPA 8081</b>								
4,4'-DDD	µg/kg	58.6	2400	19000	NA	2.3 U	2.3 U	NA
4,4'-DDE	µg/kg	233	1700	1300	NA	2.3 U	2.3 U	NA
4,4'-DDT	µg/kg	272	1700	13000	NA	2.3 U	2.3 U	NA
Aldrin	µg/kg	NE	26	180	NA	2.3 U	2.3 U	NA
alpha-BHC	µg/kg	NE	86	670	NA	0.8 UJ	0.81 UJ	NA
alpha-Chlordane	µg/kg	17.7	1600	12000	NA	2.3 U	2.3 U	NA
Aroclor-1016	µg/kg	NE	3400	63000	NA	38 U	38 U	NA
Aroclor-1221	µg/kg	NE	200	1300	NA	38 U	38 U	NA
Aroclor-1232	µg/kg	NE	200	1300	NA	38 U	38 U	NA
Aroclor-1242	µg/kg	NE	200	1300	NA	38 U	38 U	NA
Aroclor-1248	µg/kg	NE	200	1300	NA	38 U	38 U	NA
Aroclor-1254	µg/kg	NE	970	18000	NA	38 U	38 U	NA
Aroclor-1260	µg/kg	NE	200	1300	NA	38 U	38 U	NA
Beta-BHC	µg/kg	NE	300	2300	NA	2.3 U	2.3 U	NA
Delta-BHC	µg/kg	NE	NE	NE	NA	2.3 U	2.3 U	NA
Dieldrin	µg/kg	118	28	190	NA	2.3 U	2.3 U	NA
Endosulfan I	µg/kg	0.179	330000	6400000	NA	0.8 U B	0.81 U B	NA
Endosulfan II	µg/kg	10.6	330000	6400000	NA	2.3 U	2.3 U	NA
Endosulfan sulfate	µg/kg	4.21	NE	NE	NA	2.3 U	2.3 U	NA
Endrin	µg/kg	19.9	16000	320000	NA	2.3 U	2.3 U	NA
Endrin aldehyde	µg/kg	41.7	NE	NE	NA	2.3 U	2.3 U	NA
Endrin ketone	µg/kg	NE	NE	NE	NA	2.3 U	2.3 U	NA
gamma-BHC	µg/kg	NE	420	3200	NA	2.3 U	2.3 U	NA

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-633	18609-704	18609-705	18609-706
Sample Location					TAA314-SBC	TAA314-SBD	TAA314-SBD (Dup)	TAA314-SBD
Date Collected					10/16/97	10/20/97	10/20/97	10/20/97
Sample Depth (feet below ground surface)					3	1.5	2	3
	Unit	Background	PRG Residential	PRG Industrial				
gamma-Chlordane	µg/kg	18	1600	12000	NA	2.3 U	2.3 U	NA
Heptachlor	µg/kg	NE	99	670	NA	2.3 U	2.3 U	NA
Heptachlor epoxide	µg/kg	NE	49	330	NA	2.3 U	2.3 U	NA
Methoxychlor	µg/kg	NE	270000	5300000	NA	2.3 U	2.3 U	NA
Toxaphene	µg/kg	NE	400	2700	NA	200 U	200 U	NA
<b>EPA 8260A</b>								
1,1,1-Trichloroethane	µg/kg	NE	680000	1400000	5.7 U	5.7 U	5.8 U	6 U
1,1,2,2-Tetrachloroethane	µg/kg	NE	360	870	5.7 U	5.7 U	5.8 U	6 U
1,1,2-Trichloroethane	µg/kg	NE	820	1900	5.7 U	5.7 U	5.8 U	6 U
1,1-Dichloroethane	µg/kg	NE	570000	2000000	5.7 U	5.7 U	5.8 U	6 U
1,1-Dichloroethene	µg/kg	NE	52	120	5.7 U	5.7 U	5.8 U	6 U
1,2-Dichloroethane	µg/kg	NE	340	760	5.7 U	5.7 U	5.8 U	6 U
1,2-Dichloropropane	µg/kg	NE	340	760	5.7 U	5.7 U	5.8 U	6 U
2-Butanone (MEK)	µg/kg	NE	6900000	27000000	57 U	57 UJ	58 UJ	60 UJ
2-Chloroethyl vinyl ether	µg/kg	NE	NE	NE	57 U	57 U	58 U	60 U
2-Hexanone	µg/kg	NE	NE	NE	57 U	57 UJ	58 UJ	60 UJ
4-Methyl-2-pentanone (MIBK)	µg/kg	NE	750000	2800000	57 U	57 UJ	58 UJ	60 UJ
Acetone	µg/kg	NE	1400000	6100000	57 UJ	57 UJ	58 UJ	60 UJ
Benzene	µg/kg	NE	620	1400	5.7 U	5.7 U	5.8 U	6 U
Bromodichloromethane	µg/kg	NE	980	2300	5.7 U	5.7 U	5.8 U	6 U
Bromoform	µg/kg	NE	56000	380000	5.7 U	5.7 U	5.8 U	6 U
Bromomethane	µg/kg	NE	3800	13000	5.7 U	5.7 U	5.8 U	6 U
Carbon disulfide	µg/kg	NE	350000	1200000	5.7 U	5.7 U	5.8 U	6 U
Carbon tetrachloride	µg/kg	NE	230	520	5.7 U	5.7 U	5.8 U	6 U
Chlorobenzene	µg/kg	NE	54000	180000	5.7 U	5.7 U	5.8 U	6 U
Chloroethane	µg/kg	NE	NE	NE	5.7 U	5.7 U	5.8 U	6 U
Chloroform	µg/kg	NE	240	520	5.7 U	5.7 U	5.8 U	6 U
Chloromethane	µg/kg	NE	1200	2600	5.7 U	5.7 U	5.8 U	6 U

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-633	18609-704	18609-705	18609-706
Sample Location					TAA314-SBC	TAA314-SBD	TAA314-SBD (Dup)	TAA314-SBD
Date Collected					10/16/97	10/20/97	10/20/97	10/20/97
Sample Depth (feet below ground surface)					3	1.5	2	3
	Unit	Background	PRG Residential	PRG Industrial				
cis-1,2-Dichloroethene	µg/kg	NE	42000	150000	5.7 U	5.7 U	5.8 U	6 U
cis-1,3-Dichloropropene	µg/kg	NE	81	180	5.7 U	5.7 U	5.8 U	6 U
Dibromochloromethane	µg/kg	NE	5300	36000	5.7 U	5.7 U	5.8 U	6 U
Ethylbenzene	µg/kg	NE	230000	230000	5.7 U	5.7 U	5.8 U	6 U
Methyl tert-butyl ether (MTBE)	µg/kg	NE	NE	NE	11 U	11 U	12 U	12 U
Methylene chloride	µg/kg	NE	8500	20000	5.7 U	5.7 U	5.8 U	6 U
Styrene	µg/kg	NE	1700000	1700000	5.7 U	5.7 U	5.8 U	6 U
Tetrachloroethene	µg/kg	NE	4700	16000	5.7 U	5.7 U	5.8 U	6 U
Toluene	µg/kg	NE	520000	520000	5.7 U	5.7 U	5.8 U	6 U
trans-1,2-Dichloroethene	µg/kg	NE	62000	210000	5.7 U	5.7 U	5.8 U	6 U
trans-1,3-Dichloropropene	µg/kg	NE	81	180	5.7 U	5.7 U	5.8 U	6 U
Trichloroethene	µg/kg	NE	2700	6100	5.7 U	5.7 U	5.8 U	6 U
Vinyl acetate	µg/kg	NE	420000	1400000	11 UJ	11 UJ	12 UJ	12 UJ
Vinyl Chloride	µg/kg	NE	21	48	5.7 U	5.7 UJ	5.8 UJ	6 UJ
Xylenes (total)	µg/kg	NE	210000	210000	17 U	17 U	17 U	18 U
<b>EPA 8270B</b>								
1,2,4-Trichlorobenzene	µg/kg	NE	480000	1700000	NA	380 U	380 U	NA
1,2-Dichlorobenzene	µg/kg	NE	370000	370000	NA	380 U	380 U	NA
1,3-Dichlorobenzene	µg/kg	NE	41000	140000	NA	380 U	380 U	NA
1,4-Dichlorobenzene	µg/kg	NE	3000	7300	NA	380 U	380 U	NA
2,4,5-Trichlorophenol	µg/kg	NE	5500000	11000000	NA	380 U	380 U	NA
2,4,6-Trichlorophenol	µg/kg	NE	40000	270000	NA	380 U	380 U	NA
2,4-Dichlorophenol	µg/kg	NE	160000	3200000	NA	380 U	380 U	NA
2,4-Dimethylphenol	µg/kg	NE	1100000	21000000	NA	380 U	380 U	NA
2,4-Dinitrophenol	µg/kg	NE	110000	2100000	NA	950 U	970 U	NA
2,4-Dinitrotoluene	µg/kg	NE	110000	2100000	NA	380 U	380 U	NA
2,6-Dinitrotoluene	µg/kg	NE	55000	1100000	NA	380 U	380 U	NA
2-Chloronaphthalene	µg/kg	NE	3700000	24000000	NA	380 U	380 U	NA

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-633	18609-704	18609-705	18609-706
Sample Location					TAA314-SBC	TAA314-SBD	TAA314-SBD (Dup)	TAA314-SBD
Date Collected					10/16/97	10/20/97	10/20/97	10/20/97
Sample Depth (feet below ground surface)					3	1.5	2	3
	Unit	Background	PRG Residential	PRG Industrial				
2-Chlorophenol	µg/kg	NE	59000	240000	NA	380 U	380 U	NA
2-Methyl-4,6-dinitrophenol	µg/kg	NE	NE	NE	NA	950 U	970 U	NA
2-Methylnaphthalene	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
2-Methylphenol	µg/kg	NE	2700000	53000000	NA	380 U	380 U	NA
2-Nitroaniline	µg/kg	NE	3300	64000	NA	380 U	380 U	NA
2-Nitrophenol	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
3,3'-Dichlorobenzidine	µg/kg	NE	990	6700	NA	380 U	380 U	NA
3-Methyl-4-chlorophenol	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
3-Nitroaniline	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
4-Bromophenyl phenyl ether	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
4-Chloroaniline	µg/kg	NE	220000	4300000	NA	380 U	380 U	NA
4-Chlorophenyl phenyl ether	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
4-Methylphenol	µg/kg	NE	270000	5300000	NA	380 U	380 U	NA
4-Nitroaniline	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
4-Nitrophenol	µg/kg	NE	3400000	66000000	NA	950 U	970 U	NA
Acenaphthene	µg/kg	NE	2600000	28000000	NA	380 U	380 U	NA
Acenaphthylene	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
Anthracene	µg/kg	NE	14000000	220000000	NA	380 U	380 U	NA
Benzo[a]anthracene	µg/kg	NE	560	3600	NA	380 U	380 U	NA
Benzo[a]pyrene	µg/kg	NE	56	360	NA	38 U	38 U	NA
Benzo[b]fluoranthene	µg/kg	NE	560	3600	NA	380 U	380 U	NA
Benzo[ghi]perylene	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
Benzo[k]fluoranthene	µg/kg	NE	56000	36000	NA	380 U	380 U	NA
Bis (2-chloroethoxy)methane	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
Bis (2-chloroethyl)ether	µg/kg	NE	180	560	NA	38 U	38 U	NA
Bis (2-chloroisopropyl)ether	µg/kg	NE	2500	7400	NA	380 U	380 U	NA
Bis (2-ethylhexyl)phthalate	µg/kg	NE	32000	210000	NA	380 U	380 U	NA
Butyl benzyl phthalate	µg/kg	NE	930000	930000	NA	380 U	380 U	NA

**Table 4 - 2**  
**Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-633	18609-704	18609-705	18609-706
Sample Location					TAA314-SBC	TAA314-SBD	TAA314-SBD (Dup)	TAA314-SBD
Date Collected					10/16/97	10/20/97	10/20/97	10/20/97
Sample Depth (feet below ground surface)					3	1.5	2	3
	Unit	Background	PRG Residential	PRG Industrial				
Chrysene	µg/kg	NE	6100	360000	NA	380 U	380 U	NA
Di-n-butyl phthalate	µg/kg	NE	5500000	110000000	NA	380 U	380 U	NA
Di-n-octyl phthalate	µg/kg	NE	1100000	10000000	NA	380 U	380 U	NA
Dibenz[a,h]anthracene	µg/kg	NE	56	360	NA	38 U	38 U	NA
Dibenzofuran	µg/kg	NE	210000	3200000	NA	380 U	380 U	NA
Diethyl phthalate	µg/kg	NE	44000000	100000000	NA	380 U	380 U	NA
Dimethyl phthalate	µg/kg	NE	100000000	100000000	NA	380 U	380 U	NA
Fluoranthene	µg/kg	NE	2000000	37000000	NA	380 U	380 U	NA
Fluorene	µg/kg	NE	1800000	22000000	NA	380 U	380 U	NA
Hexachlorobenzene	µg/kg	NE	280	1900	NA	380 U Y*	380 U Y*	NA
Hexachlorobutadiene	µg/kg	NE	5700	38000	NA	380 U	380 U	NA
Hexachlorocyclopentadiene	µg/kg	NE	380000	7100000	NA	380 U	380 U	NA
Hexachloroethane	µg/kg	NE	32000	210000	NA	380 U	380 U	NA
Indeno[1,2,3-cd]pyrene	µg/kg	NE	560	3600	NA	380 U	380 U	NA
N-Nitrosodi-n-propylamine	µg/kg	NE	63	430	NA	38 U	38 U	NA
N-Nitrosodiphenylamine	µg/kg	NE	91000	610000	NA	380 U	380 U	NA
Naphthalene	µg/kg	NE	55000	190000	NA	380 U	380 U	NA
Nitrobenzene	µg/kg	NE	16000	100000	NA	380 U	380 U	NA
Pentachlorophenol	µg/kg	NE	2500	15000	NA	760 U	770 U	NA
Phenanthrene	µg/kg	NE	NE	NE	NA	380 U	380 U	NA
Phenol	µg/kg	NE	33000000	100000000	NA	380 U	380 U	NA
Pyrene	µg/kg	NE	1500000	26000000	NA	380 U	380 U	NA
<b>EPA 6010A</b>								
Aluminum	mg/kg	18600	75000	100000	NA	7000	8100	NA
Antimony	mg/kg	4.5	30	750	NA	5.7 U B	5.8 U B	NA
Barium	mg/kg	220	5200	100000	NA	110	110	NA
Beryllium	mg/kg	0.893	150	3400	NA	0.56	0.58	NA
Cadmium	mg/kg	11.4	9	930	NA	0.57 U	0.58 U	NA

**Table 4 - 2  
Confirmation Soil Sample Analytical Results - TAA 314**

OHM Sample Number					18609-633	18609-704	18609-705	18609-706
Sample Location					TAA314-SBC	TAA314-SBD	TAA314-SBD (Dup)	TAA314-SBD
Date Collected					10/16/97	10/20/97	10/20/97	10/20/97
Sample Depth (feet below ground surface)					3	1.5	2	3
	Unit	Background	PRG Residential	PRG Industrial				
Calcium	mg/kg	67600	NE	NE	NA	4900	6600	NA
Chromium	mg/kg	39.6	210	450	NA	8.4	9.8	NA
Cobalt	mg/kg	7.96	3300	29000	NA	6.0	6.3	NA
Copper	mg/kg	37.9	2800	70000	NA	8.3	8.1	NA
Iron	mg/kg	19000	22000	100000	NA	11000	12000	NA
Magnesium	mg/kg	11100	NE	NE	NA	4800	5200	NA
Manganese	mg/kg	574	3100	45000	NA	210	210	NA
Molybdenum	mg/kg	NE	370	9400	NA	2.3 U	2.3 U	NA
Nickel	mg/kg	71.1	150	37000	NA	11.0	14	NA
Potassium	mg/kg	5560	NE	NE	NA	2300	2400	NA
Silver	mg/kg	0.65	370	9400	NA	1.1 U B	1.2 U B	NA
Sodium	mg/kg	483	NE	NE	NA	290	310	NA
Thallium	mg/kg	0.53	5.2	130	NA	5.7 U BY	3.8 J B	NA
Vanadium	mg/kg	102	520	13000	NA	28	29	NA
Zinc	mg/kg	104	22000	100000	NA	33	37	NA
<b>EPA 7060A</b>								
Arsenic	mg/kg	8.5	0.38*	3	NA	3.1 XY	3.1 XY	NA
<b>EPA 7421</b>								
Lead	mg/kg	22.9	130	1000	NA	3.2	3.4	NA
<b>EPA 7471A</b>								
Mercury	mg/kg	0.41	22	560	NA	0.092 U	0.093 U	NA
<b>EPA 7740</b>								
Selenium	mg/kg	0.37	370	9400	NA	0.57 U B	0.58 U B	NA
<b>EPA 9045</b>								
pH	pH units	NE	NE	NE	NA	8.6	8.6	NA

## Table 4 - 2 Confirmation Soil Sample Analytical Results - TAA 314

Explanation:

- B - result exceeds background
  - CA LUFT - California Leaking Underground Fuel Tank
  - EPA - United States Environmental Protection Agency
  - J - estimated
  - M - Modified
  - MDL - method detection limit
  - mg/kg - milligrams per kilogram
  - NA - not analyzed
  - NE - not established
  - OHM - OHM Remediation Services Corp.
  - PRG - Preliminary Remediation Goal, EPA Region IX, May 1998
  - RL - reporting limit
  - SB - soil boring
  - TPH - total petroleum hydrocarbons
  - U - not detected above or equal to the stated reporting limit
  - UST - underground storage tank
  - X - result exceeds industrial PRGs
  - Y - result exceeds residential PRGs
  - µg/kg - micrograms per kilogram
- \* If the analyte had been detected between the MDL and RL the actual value would have been reported and flagged with a "J" qualifier. For the samples in question, the laboratory did not detect analyte concentrations between the MDL and the RL. As a result, the samples are qualified as non-detect ("U").

**Table 5-1  
Risk Screening Worksheet for Soil - Residential PRG Values  
TAA 314, Marine Corps Air Station, El Toro**

Detected Chemical	Maximum TAA 314 Soil Concentration (mg/kg)	MCAS El Toro Background Concentration <sup>A</sup> (mg/kg)	CANCER			NON-CANCER		
			Residential PRG <sup>B</sup> (mg/kg)	TAA 314 Maximum Ratio <sup>C</sup>	MCAS El Toro Background Ratio <sup>D</sup>	Residential PRG <sup>E</sup> (mg/kg)	TAA 314 Maximum Ratio	MCAS El Toro Background Ratio <sup>D</sup>
<b>PCBs/Pesticides</b>								
4,4'-DDE	0.0079	0.233	1.7E+00	4.65E-03	4.65E-03	1.7E+00	4.65E-03	4.65E-03
Aldrin	0.012	0.272	2.6E-02	4.62E-01	4.62E-01	1.6E+00	7.50E-03	7.50E-03
Heptachlor	0.032	NE	9.9E-02	3.23E-01	3.23E-01	2.7E+01	1.19E-03	1.19E-03
alpha-Chlordane	0.093	0.018	1.6E+00	5.81E-02	1.13E-02	1.6E+00	5.81E-02	1.13E-02
gamma-Chlordane	0.091	0.018	1.6E+00	5.69E-02	1.13E-02	1.6E+00	5.69E-02	1.13E-02
<b>METALS</b>								
Aluminum	18,000	18,600	NE	NE	NE	7.5E+04	2.40E-01	2.40E-01
Arsenic	3.5	8.5	3.8E-01	9.21E+00	9.21E+00	2.1E+01	1.67E-01	1.67E-01
Barium	130	220	NE	NE	NE	5.3E+03	2.45E-02	2.45E-02
Beryllium	0.76	0.893	NE	NE	NE	1.5E+02	5.07E-03	5.07E-03
Chromium	18	39.6	2.1E+02	8.57E-02	8.57E-02	NE	NE	NE
Cobalt	9.8	7.96	NE	NE	NE	3.3E+03	2.97E-03	2.41E-03
Copper	23	37.9	NE	NE	NE	2.8E+03	8.21E-03	8.21E-03
Lead	4.7	22.9	NE	NE	NE	4.0E+02	1.18E-02	1.18E-02
Manganese	270	574	NE	NE	NE	3.1E+03	8.71E-02	8.71E-02
Nickel	14	71.1	NE	NE	NE	1.5E+03	9.33E-03	9.33E-03
Thallium	3.8	0.53	NE	NE	NE	5.2E+00	7.31E-01	1.02E-01
Vanadium	48	102	NE	NE	NE	5.2E+02	9.23E-02	9.23E-02
Zinc	56	104	NE	NE	NE	2.2E+04	2.55E-03	2.55E-03
Subtotal sum of ratios				1.02E+01	1.01E+01		1.51E+00	7.88E-01
<b>MCAS EL TORO BACKGROUND RISK</b>			<b>CANCER RISK</b>		<b>1.01E-05</b>	<b>NON-CANCER HAZARD INDEX</b>		<b>7.88E-01</b>
<b>TAA 314 SUMMED RISK</b>			<b>CANCER RISK</b>	<b>1.02E-05</b>		<b>NON-CANCER HAZARD INDEX</b>	<b>1.51E+00</b>	
<b>TAA 314 RISK LESS BACKGROUND RISK (NET RISK)</b>			<b>CANCER RISK</b>	<b>9.25E-08</b>				

<sup>A</sup> MCAS El Toro Background upper threshold limit concentrations from Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996b.

<sup>B</sup> Residential soil PRG for cancer from the EPA Region 9, May 1, 1998 list.

<sup>C</sup> The Ratio is determined by dividing the Concentration by the respective PRG.

<sup>D</sup> Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.

<sup>E</sup> Residential soil PRG for non-cancer from the EPA Region 9, May 1, 1998 list.

mg/kg - Milligrams per kilogram.

NE - Not established/No entry.

PRG - Preliminary remediation goal.

**Table 5-2**  
**Risk Screening Worksheet for Soil - Industrial PRG Values**  
**TAA 314, Marine Corps Air Station, El Toro**

Detected Chemical	Maximum TAA 314 Soil Concentration (mg/kg)	MCAS El Toro Background Concentration <sup>A</sup> (mg/kg)	CANCER			NON-CANCER		
			Industrial PRG <sup>B</sup> (mg/kg)	TAA 314 Maximum Ratio <sup>C</sup>	MCAS El Toro Background Ratio <sup>D</sup>	Industrial PRG <sup>E</sup> (mg/kg)	TAA 314 Maximum Ratio	MCAS El Toro Background Ratio <sup>D</sup>
<b>PCBs/Pesticides</b>								
4,4'-DDE	0.0079	0.233	1.3E+00	6.08E-03	6.08E-03	1.3E+00	6.08E-03	6.08E-03
Aldrin	0.012	0.272	1.8E-01	6.67E-02	6.67E-02	3.2E+01	3.75E-04	3.75E-04
Heptachlor	0.032	NE	6.7E-01	4.78E-02	4.78E-02	5.3E+02	6.04E-05	6.04E-05
alpha-Chlordane	0.093	0.018	1.2E+01	7.75E-03	1.50E-03	1.2E+01	7.75E-03	1.50E-03
gamma-Chlordane	0.091	0.018	1.2E+01	7.58E-03	1.50E-03	1.2E+01	7.58E-03	1.50E-03
<b>METALS</b>								
Aluminum	18,000	18,600	NE	NE	NE	1.0E+05	1.80E-01	1.80E-01
Arsenic	3.5	8.5	3.0E+00	1.17E+00	1.17E+00	4.8E+02	7.29E-03	7.29E-03
Barium	130	220	NE	NE	NE	1.0E+05	1.30E-03	1.30E-03
Beryllium	0.76	0.893	NE	NE	NE	3.4E+03	2.24E-04	2.24E-04
Chromium	18	39.6	4.5E+02	4.00E-02	4.00E-02	NE	NE	NE
Cobalt	9.8	7.96	NE	NE	NE	2.9E+04	3.38E-04	2.74E-04
Copper	23	37.9	NE	NE	NE	7.0E+04	3.29E-04	3.29E-04
Lead	4.7	22.9	NE	NE	NE	1.0E+03	4.70E-03	4.70E-03
Manganese	270	574	NE	NE	NE	4.5E+04	6.00E-03	6.00E-03
Nickel	14	71.1	NE	NE	NE	3.7E+04	3.78E-04	3.78E-04
Thallium	3.8	0.53	NE	NE	NE	1.3E+02	2.92E-02	4.08E-03
Vanadium	48	102	NE	NE	NE	1.3E+04	3.69E-03	3.69E-03
Zinc	56	104	NE	NE	NE	1.0E+05	5.60E-04	5.60E-04
Subtotal sum of ratios			1.34E+00		1.33E+00		2.56E-01	2.18E-01
<b>MCAS EL TORO BACKGROUND RISK</b>			<b>CANCER RISK</b>		<b>1.33E-06</b>	<b>NON-CANCER HAZARD INDEX</b>		<b>2.18E-01</b>
		<b>TAA 314 RISK</b>	<b>CANCER RISK</b>	<b>1.34E-06</b>		<b>NON-CANCER HAZARD INDEX</b>	<b>2.56E-01</b>	
<b>TAA 314 RISK LESS BACKGROUND RISK (NET RISK)</b>			<b>NET CANCER RISK</b>	<b>1.23E-08</b>				

<sup>A</sup> MCAS El Toro Background upper threshold limit concentrations from Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996b.

<sup>B</sup> Industrial soil PRG for cancer from the EPA Region 9, May 1, 1998 list.

<sup>C</sup> The Ratio is determined by dividing the Concentration by the respective PRG.

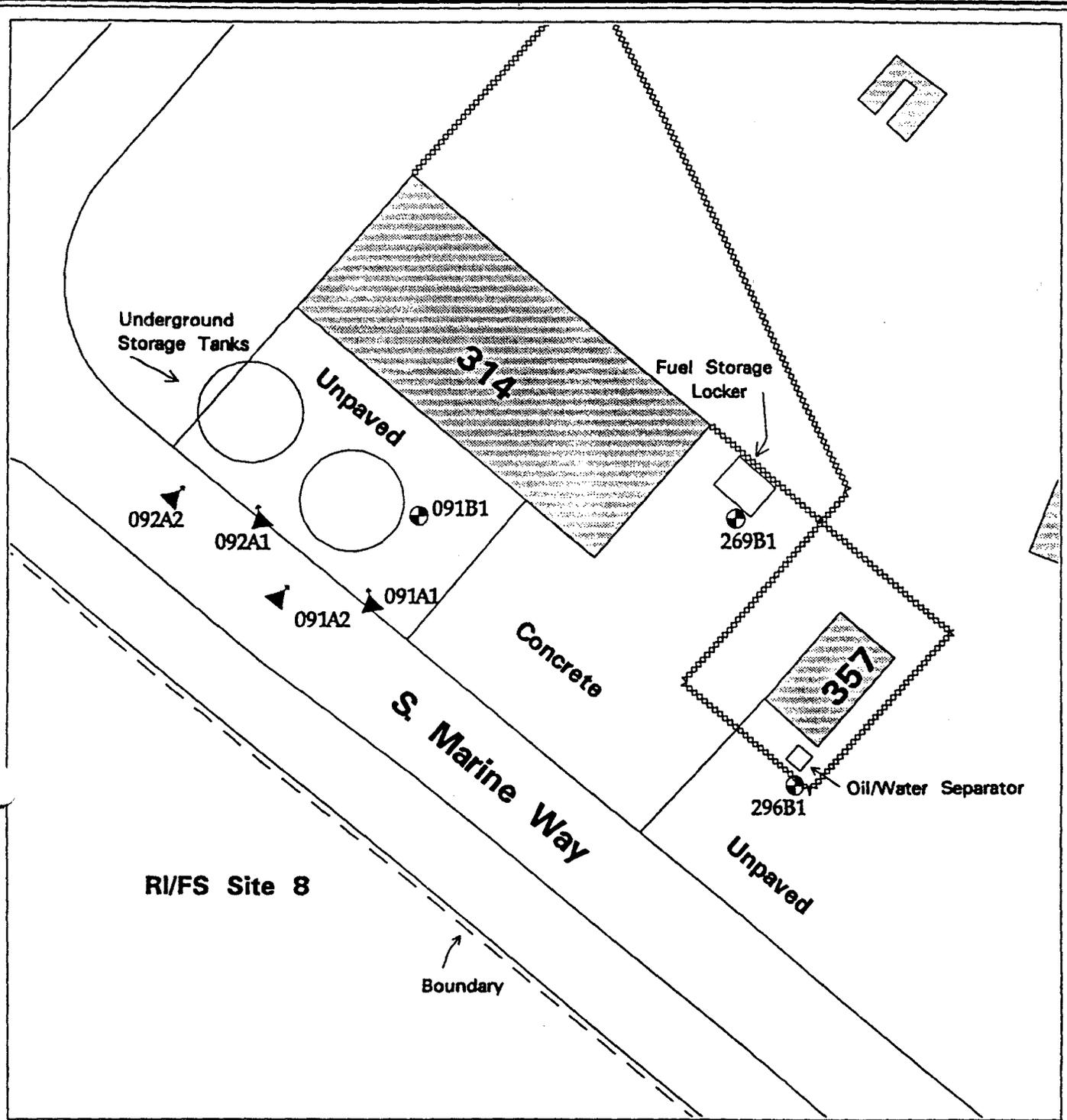
<sup>D</sup> Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.

<sup>E</sup> Industrial soil PRG for non-cancer from the EPA Region 9, May 1, 1998 list.

mg/kg - Milligrams per kilogram.

NE - Not established/no entry.

***Appendix A***  
***JEG RFA Background Information***



**Figure 31 Sample Location Map**

**Boring Location and Number:**

- ⊕ 123H4 5' Deep Boring
- ⊙ 123B4 25' Deep Boring
- ▲ 123A4 60' Long, Angle Boring

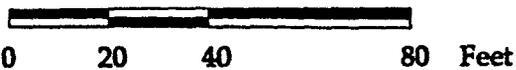
**Features:**

-  Building
-  Concrete
-  Fence
-  Railroad

**SWMU/AOC Number and Type:**

- 91 - Underground Storage Tank
- 92 - Underground Storage Tank
- 269 - Fuel Storage Locker
- 296 - Oil/Water Separator

**Scale**



MCAS El Toro  
RCRA Facility Assessment

**MCAS EL TORO RCRA FACILITY ASSESSMENT – SAMPLING VISIT RESULTS**

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS							RECOMMENDATIONS		
				TPH (mg/kg)	TFH (mg/kg)		VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	Action	Rationale	
					Gasoline	Diesel							
269	Fuel Storage Locker (31)	B1	5	68	NA	NA	Methylene Chloride-3 BJ * Acetone-9 BJ *	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL  CRDL - Contract Required Detection Limit	
			10	ND	NA	NA	Methylene Chloride-4 BJ *	NA	NA	NA			
			15	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-14 B *	NA	NA	NA			NA
			20	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-24 B *	NA	NA	NA			NA
			25	364	NA	NA	Methylene Chloride-4 BJ * Acetone-26 B *	NA	NA	NA			NA

**Evaluation Form  
SWMU/Area of Concern  
Number 269**

Unit Characteristics

An underground storage tank area west of Building 314 was discovered during the VSI for SWMU/AOC Number 91. This area appears to be the location of three underground storage tanks. The top surface of the storage area is approximately 2,500 sq ft in size. The location of the tanks is identified by three wood housing vaults. The housing vaults provide cover for the top of the USTs. Inside one vault, the top opening of a UST was observed. A liquid surface could be seen approximate 2 in. from the top of the tank. There was also a hose stored inside the vault with one end placed inside the tank opening. The hoses appeared to be used for filling the tank. The inside of the housing vaults and the ground surrounding the housing vaults is stained. A strong petroleum odor is present around the storage area.

Waste Characteristics

Waste petroleum (possibly oil and/or JP-5)

Possible Migration Pathways

Subsurface soil

Evidence of Release

Staining inside and surrounding the housing vaults

Exposure Potential

On-Station personnel

Recommendations

These tanks have not been tank tested. There are stains on the pavement around these tanks although soil does not appear to be impacted. Since it is difficult to assess the potential for release from these underground tanks, a sampling visit is recommended for this SWMU/AOC.

**Evaluation Form  
SWMU/Area of Concern  
Number 269**

Name: Underground Storage Tank

Location: West of Building 314

Size: Unknown

Date of Site Visit: 24 April 1991



Period of Operation

Currently active

***Appendix B***  
***BNI VSI Evaluation Report***

# ACCUMULATION AREA EVALUATION CHECKLIST

(CIRCLE AS APPROPRIATE AND FILL IN COMPLETELY)

JOB 22214  
NAVY CLEAN II

CTD-0065  
MCAS EL TORO RFA CONFIRMATION ACTIVITIES

## GENERAL DESCRIPTION:

SWMU: 269 Accumulation Area (AA) #: 314  
Location (bldg): HWSA/Bldg. 314  
Site Contact: Leta Suarez Ext: 2772  
Permission for Access? ~~Y~~  N If yes, explain: N/A.  
Type of Wastes Observed: None

## TYPE: (CIRCLE AS APPROPRIATE)

~~Locker~~ ~~Cabinet~~ ~~Pad~~  Concrete ~~Soil~~ ~~Asphalt~~ floor  
~~Barr~~  Fence Fence Type: Cyclone ~~Indoor~~  
 Pallets 16  Drum(s) No. of Drums: 50 barrels  Outdoor

## CONDITION:

~~Stain(s)~~ ~~Odor(s)~~ ~~Crack(s)~~  
Placards/Labels: ~~Y~~  N If Yes, list: .  
Observations: Simple concrete surface at south end of building with some pallets.  
No placarding. Some minor rust colored stains. 6" diam. surface  
drain plugged with debris.  
Status: No change as of 11-10-95.

## DIMENSIONS: (ESTIMATED SIZE OR AREA IN FT)

AA/SWMU: 20x20 ft.  
"Stain(s)": some rust spots.  
Any Restrictions To Access?: None.

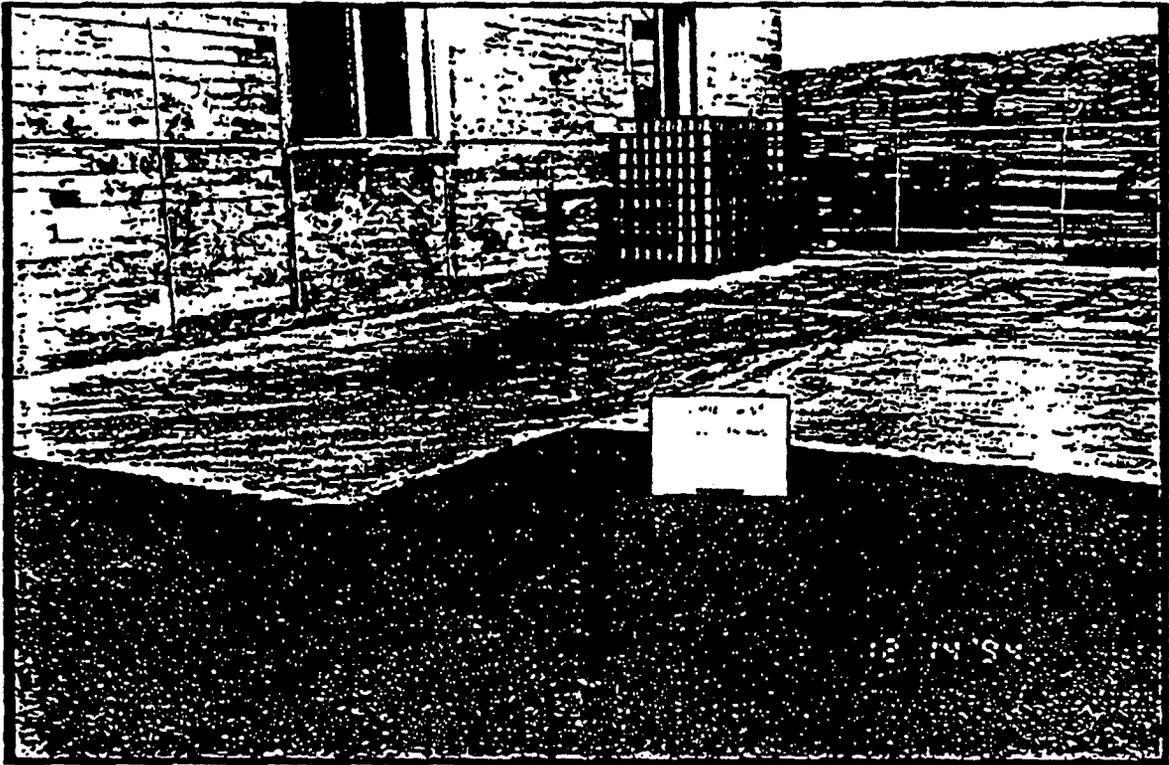
## EVALUATION OF REMOVAL/DECONTAMINATION STRATEGY (CIRCLE AS APPROPRIATE)

Yes  No  Potential for release evident based on this surveillance  
Yes  No  Potential for simple removal  
Yes  No  Potential for decontamination activities prior to removal  
Yes  No  Potential for sampling (describe: )  
Yes  No  Potential for removal after additional assessment activities

## SKETCH: (MAKE A SKETCH or ATTACH PHOTO(S) OF RELEVANT ACCESS, OBJECTS, WORK SPACE, ETC., AS APPROPRIATE, ON REVERSE OF THIS FORM)

DATE/TIME OF SURVEILLANCE: 12-2-94/14:20  
UPDATED: 11-10-95/11:40  
SURVEILLANCE PERFORMED BY: Larry Bauman

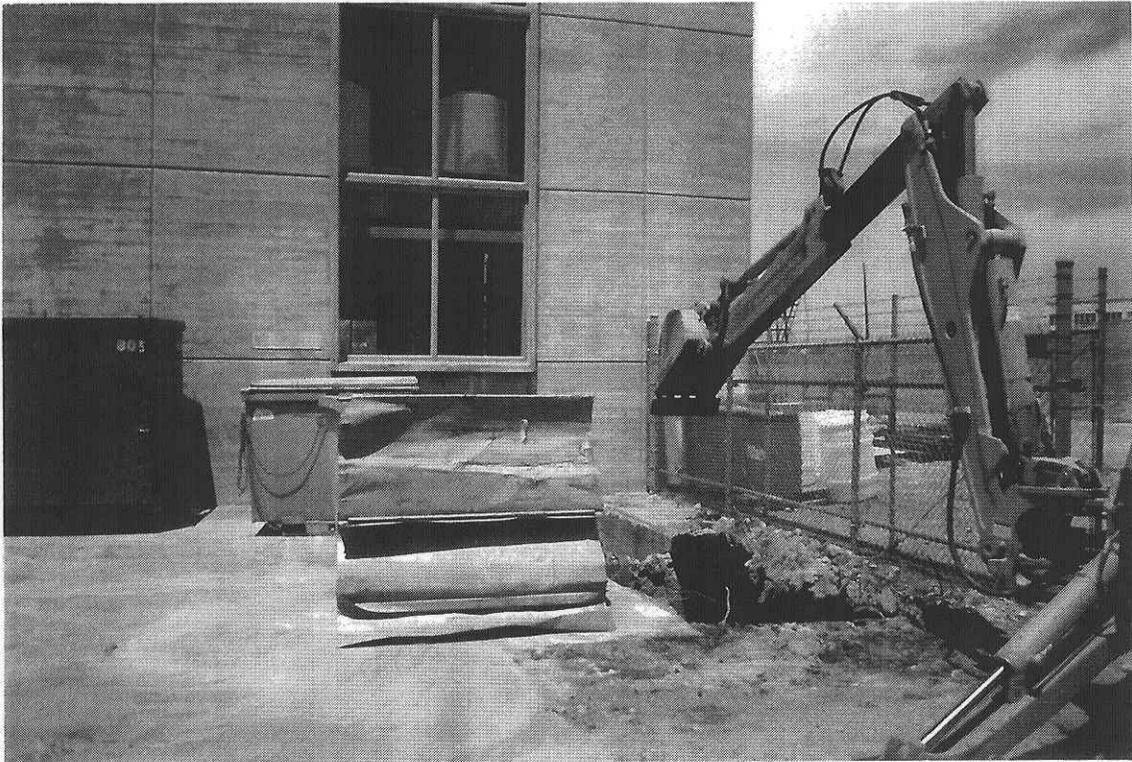
**PHOTO LOG**



**SWMU #: 269**

**PHOTO DATE: 12-14-94**

*Appendix C*  
*Site Photographs*



OWS 314C Removal in the Vicinity of TAA 314 Area



TAA 314 Concrete Coring Activities near Building 314.

***Appendix D***  
***Site Assessment Log***

**SITE ASSESSMENT LOG**

MCAS EL TORO

TEMPORARY ACCUMULATION AREA & RFA SITE

18609, D.O. 70

TAA SITE: 314 RFA SITE: N/A SWMU NO. 269

Field Observations by: D. Rowland

Date: January 1996, 4  
September 15, 1997

TAA area Paved or Unpaved

Paved: Concrete or Asphalt, Condition of the Concrete/Asphalt: Minor Cracks, Stains, etc.

NO cracks or spills observed

Unpaved: Open on the Ground or Inside the Building

Is there any Drums or any types of Waste Stored: Yes/No, If Yes, Describe:

NONE, Area is empty OWS 314 C exist in the vicinity

Fenced: Yes/No, Sump: Yes No Concrete Berm: Yes/No, N/A inch, Roof: Yes No

Describe other Structural details:

Part of area was Fuel Locker Storage area, on concrete paved area. Locker is removed NO sign of any hazardous waste or material storage.

TAA Decontamination and/or Demolition Possible: Yes/No

NO Decon required. only Soil Sampling

Site Setup Constrains: Equipment Operation, movement of Excavator or Backhoe

NONE

Nearest Building or Structure Distance:

Building 314 is 2 feet

Any Underground Piping/Lines, or Transformer Observed:

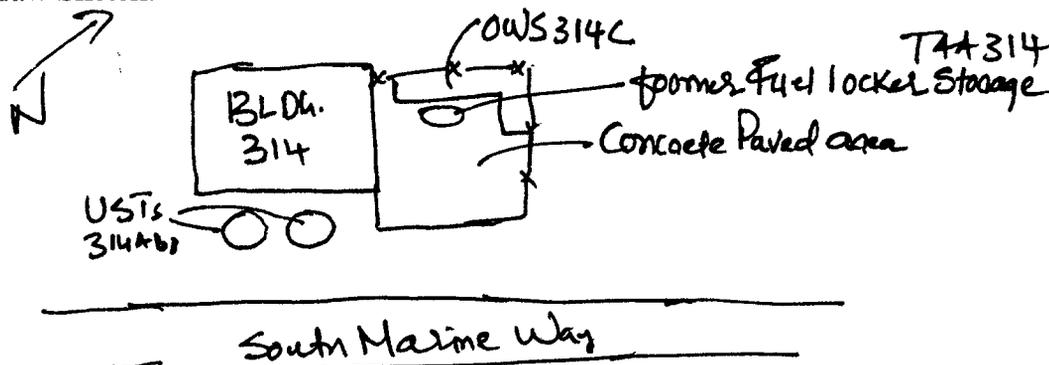
NONE but Geophysical Acquired from OWS 314 C

Overhead Utility Lines/Poles:

Yes but NOT Applicable to this field activity

Photograph Roll No. A4 Please attach all the Photographs to this sheet.

Draw Sketch:



*Appendix E*  
*Geophysical Survey Data*



*geophysical services*  
*a division of Agbabian Associates*

GEOPHYSICAL SURVEY RESULTS  
FOR  
SITE 314

MARINE CORPS AIR STATION, EL TORO  
SANTA ANA, CALIFORNIA

Prepared for

OHM Remediation Services Corporation  
Irvine, California

Prepared by

GEOVISION GEOPHYSICAL SERVICES  
1785 Pomona Road, Suite B  
Corona, California, 91720

January 16, 1996

GEOVISION JOB NUMBER: 97206

## **1.0 Introduction**

---

A geophysical investigation was carried out on January 15, 1996 for OHM Remediation Services Corporation adjacent to Building 314, located at Marine Corps Air Station (MCAS) El Toro, Santa Ana, California. The investigation was conducted to verify and accurately locate the presence of all detectable underground utilities prior to drilling in the surveyed area.

## **2.0 Field Procedures**

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GEOVision's standard clearance procedures were used to survey the site to accurately locate underground utilities in the surrounding area. GEOVision field teams used the attached GEOPHYSICAL CLEARANCE FORM to ensure that all appropriate procedures were followed. Procedures that were not appropriate for the site were lined out.

The crew used the Metrotech utility locator in the 82 MHz mode, which picks up any conductive piping in the area, to circle the suspected utility location. One field crew member stood on or near the suspected utility location holding the transmitter, and keeping it constantly oriented on the second crew member who swept out a circle around the suspected utility location. If a line was found, the Metrotech transmitter was then placed on the suspected line while the second crew member tracked the line with the receiver. We also swept the area with the Metrotech in 60 hz mode to locate any live electrical lines. The utility lines found were marked on the ground and located on the map.

A GSSI SIR-2 digital Ground Penetrating Radar (GPR) system was used to collect GPR profiles surrounding the site. The enclosed site map shows the locations of all profiles, which were chosen to intercept utilities entering the area to be cleared. Profiles were collected using the 500 MHz antenna. A marker switch on the antenna handle was used to place 5' spaced fiduciary marks on each profile as the antenna was pulled along the profile lines. All GPR records were stored on the system's hard drive for later processing and archiving, and were printed out onsite using a portable printer. Representative GPR profiles, hand annotated by the operator in the field, are attached.

An accurate, scaled geophysical survey map was then drawn on the back of the GEOPHYSICAL CLEARANCE FORM. All anomalies found by GPR or utility locator directly in the area to be cleared were marked at the site and shown on the enclosed site map.

### 3.0 Conclusions

---

Four utilities and one unknown line were identified in the vicinity of the area to be cleared as indicated on the survey map included in the report. An orange dashed line encloses the cleared area.



geophysical services  
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### GEOPHYSICAL CLEARANCE FORM

PROJECT NAME: CHM-EL TORO PROJECT NUMBER 97206  
LOCATION EL TORO - MCAS  
DATE 15 JAN 97 TIME 0800h  
SITE DESCRIPTION: BLDG 314, CONG. PMS ON EAST END

### GEOPHYSICAL EQUIPMENT

GROUND PENETRATING RADAR (GPR) UNIT: SIR2 MAGNETOMETER: -  
ELECTROMAGNETIC (EM): - EM LINE TRACER (LT): 9890  
METAL DETECTOR (MD): - OTHER: -

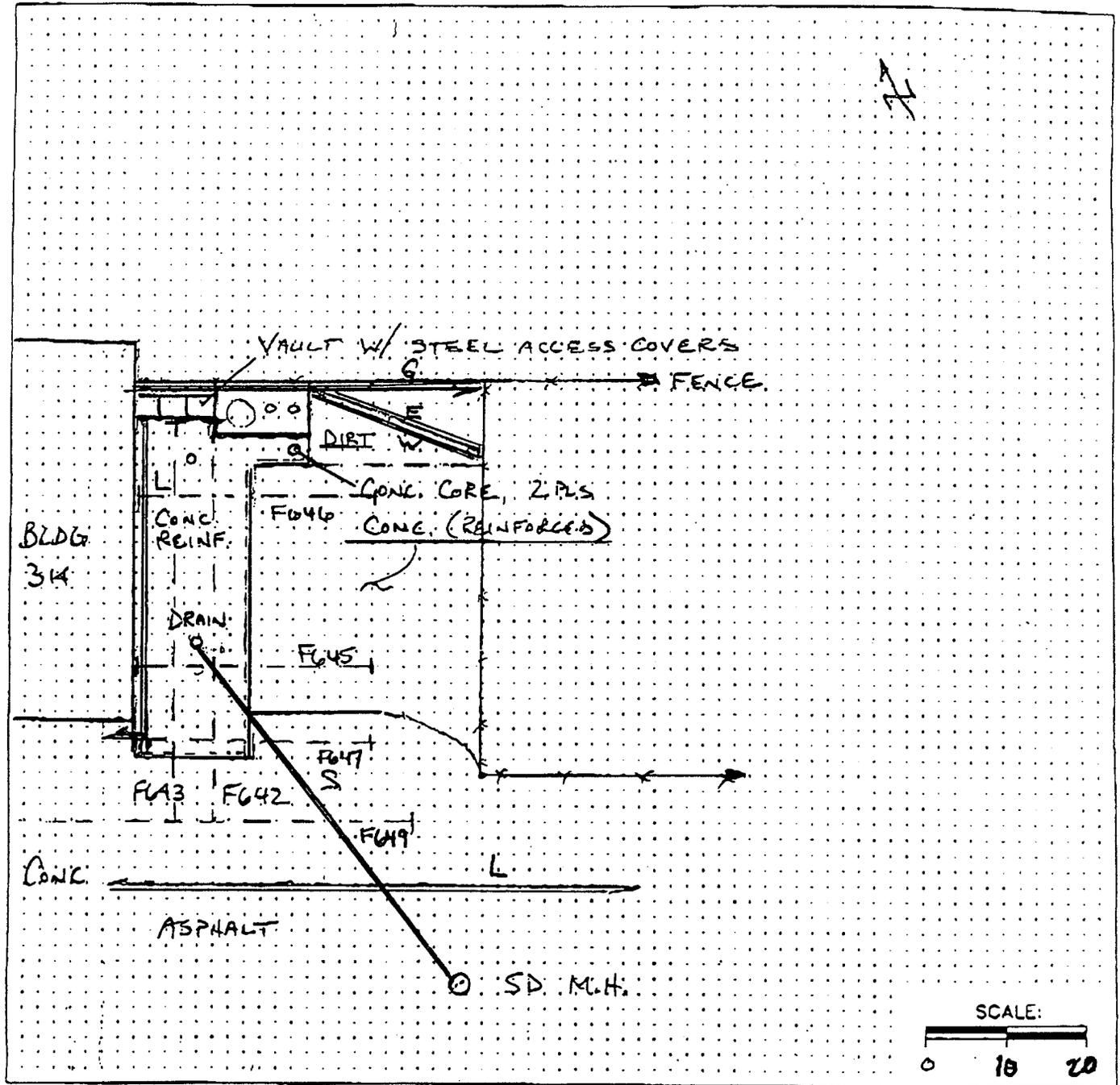
### PROCEDURES

- 1. Inspect available utility maps and trace all recorded utilities in the vicinity of the proposed drilling location using LT, and if necessary GPR.
- 2. Review available geophysical data:  Magnetic  EM-31  EM-61
- 3. Inspect site and trace all pipes evident from field observations (ie. manhole, vault, valve, cracked asphalt, pipe at surface, etc)
- 4. Sweep proposed drilling location with LT in 50/60 Hz mode
- 5. Hold LT transmitter over proposed drilling location and circle at about a 40 foot radius with receiver tracing all utilities encountered.
- 6. Conduct two perpendicular GPR profiles through proposed <sup>LOCATION</sup> borehole.  
GPR antenna: 500MHz  
GPR range: 30 m sec Estimated depth penetration \*: 3'-4' / 1'-2'  
\* utility lines below this depth cannot be detected using GPR ASPH./DIAM / R.C.
- 7. Other CLEARED AREA MARKED w/ DASHED ORANGE LINE.  
NAT. GAS IN POLY. TANKS NOT IDENTIFIABLE USING GEOPHYSICS.  
UTILITIES BENEATH REIN. CONC. NOT TRACEABLE / IDENTIFIABLE.  
SEWER LINE DRAWN FROM BARE DRAWING & SURFACE PHYSICAL REFERENCES.

FIELD PERSONNEL: R.A. MERRILL, H. QUINN

SIGNATURE: [Signature]

# GEOPHYSICAL SURVEY MAP



**LEGEND**

— — — — — GEOPHYSICAL TRAVERSE

— — — — — UTILITY:  
 E = ELECTRICAL, T = TELEPHONE,  
 G = GAS, S = SEWER, SD = STORM DRAIN,  
 W = WATER, P = PRODUCT LINE,  
 V = VENT LINE, L = UNKNOWN LINE

Scan/Sec 32.0 Bits: 8

Dielectric: 1.00

Position: 0.0ns Range: 30.0ns

R Gain -3 4 33 34 54 67

V(IIR LP N=1 F=935)

V(IIR HP N=2 F=58)

H(IIR STK TC=3)

Table #15: Transform #1

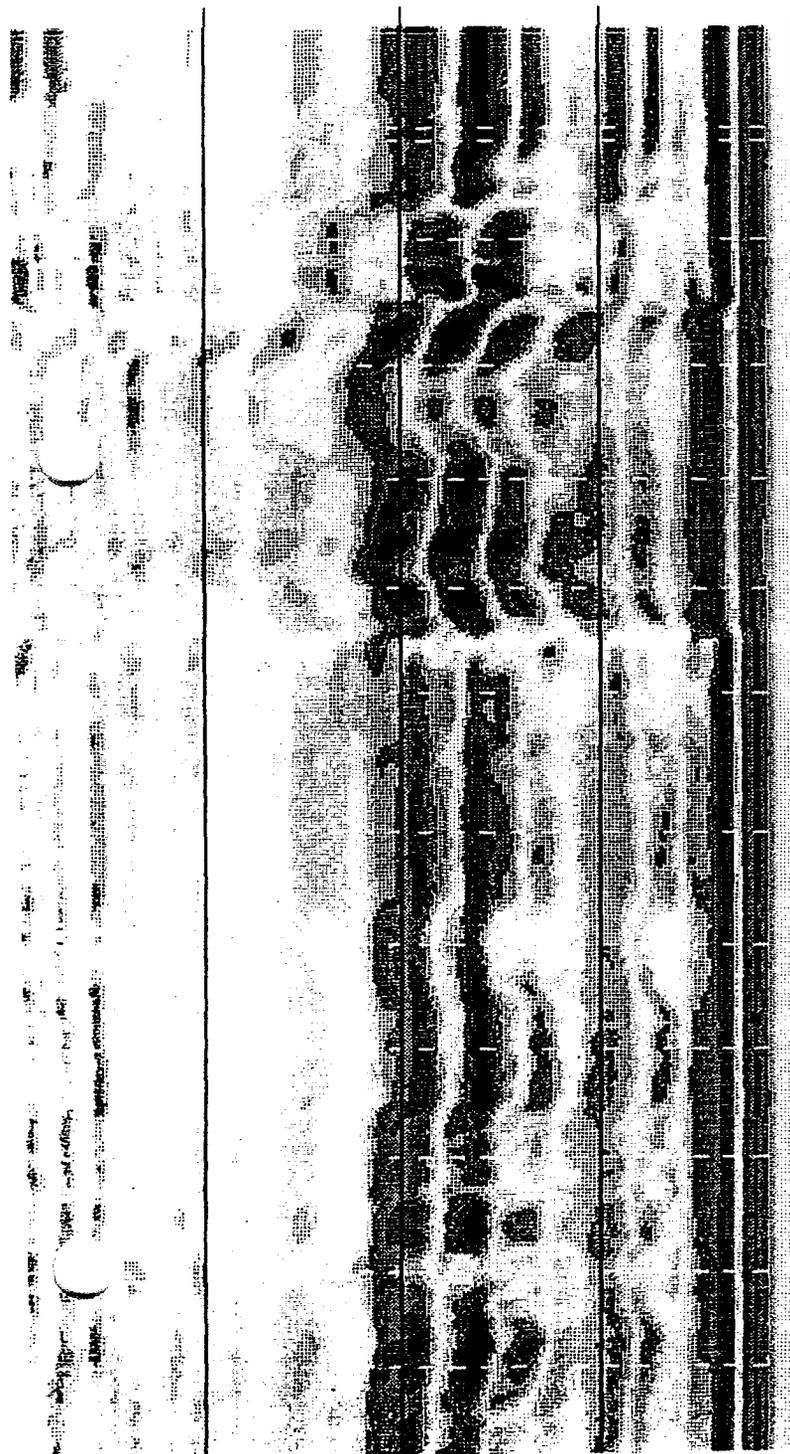


22.50ns

15.00ns

7.50ns

0.00ns



Scan/Sec 32.0 Bits: 8

Dielectric: 1.00

Position: 0.0ns Range: 30.0ns

Range Gain -3 4 33 34 54 67

V(IIR LP N=1 F=935)

V(IIR HP N=2 F=58)

H(IIR STK TC=3)

Table #15: Transform #1

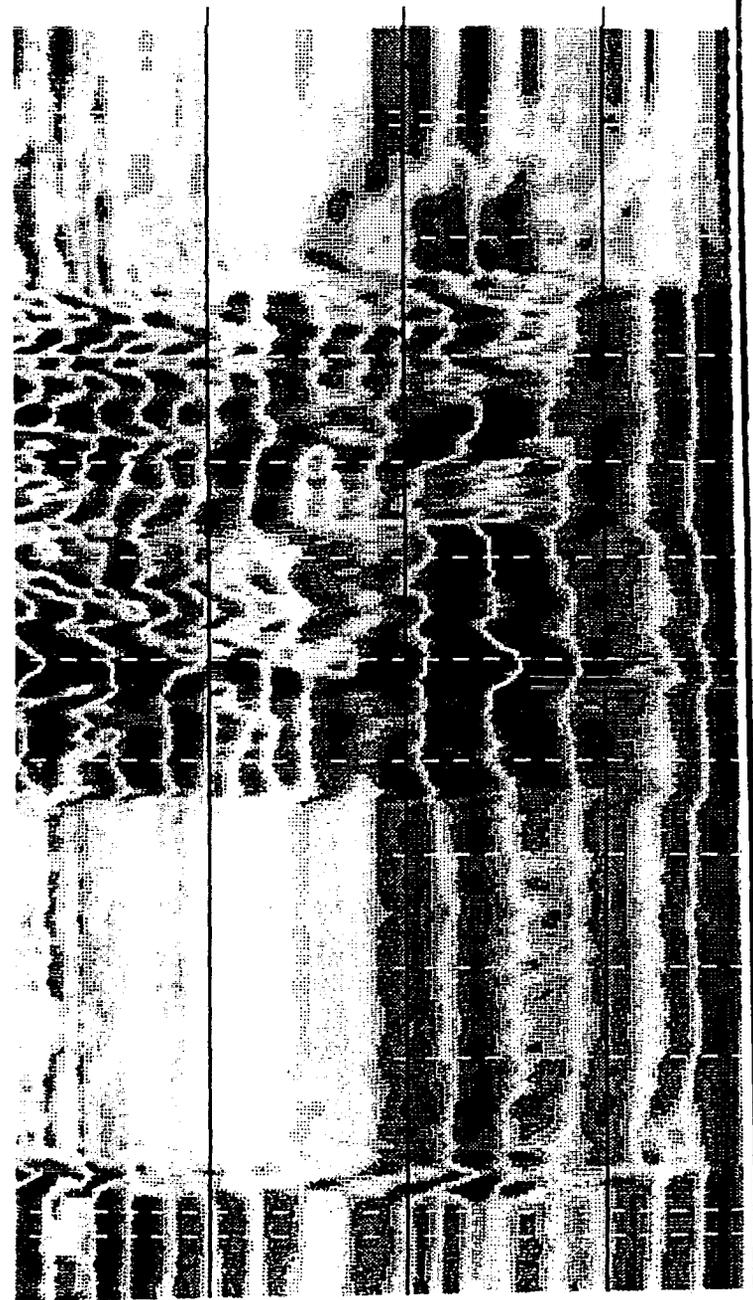


22.50ns

15.00ns

7.50ns

0



*Handwritten notes:*  
#514  
WFA  
SACM  
SOUTH OF  
CONE BUILDING

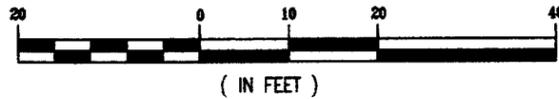
*Handwritten notes:*  
SACM  
SOUTH OF  
CONE BUILDING  
FROM EAST

*Appendix F*  
*Land Survey Data*

# MCAS, EL TORO D.O. 70 SITE 314



## GRAPHIC SCALE



1 INCH = 20 FT

PREPARED FOR:  
**OHM REMEDIATION SERVICES, CORP.**  
 2031 MAIN ST., IRVINE, CA 92714  
 (714) 263-1146

### CAL VADA SURVEYING, INC.

108 Business Center Drive Corona, CA 91720  
 1 800 CALVADA PHONE: (909) 280-9960 FAX: (909) 280-9746  
 WEB SITE <http://www.calvada.com>

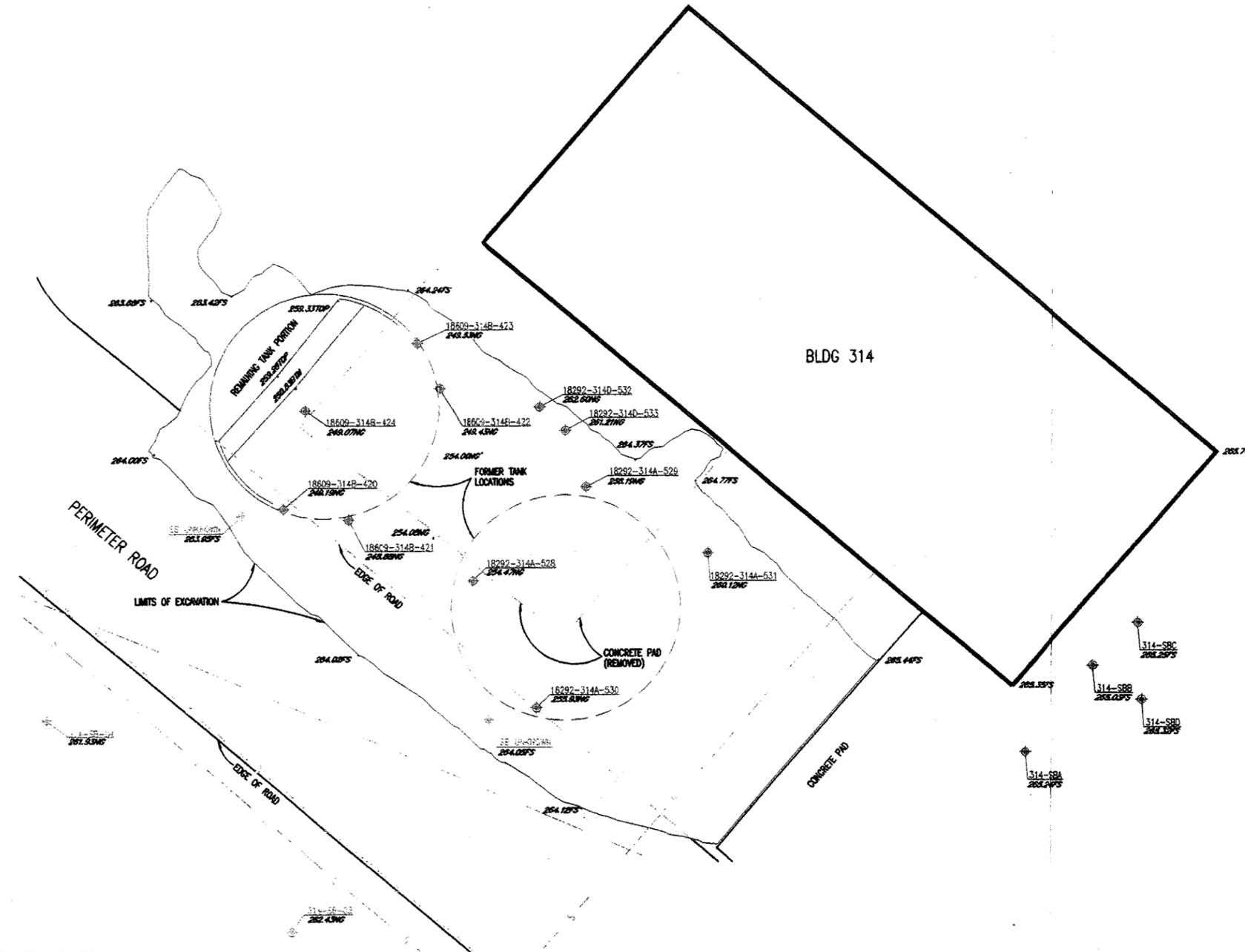
JOB NO. 97102-07C

#### SAMPLE COORDINATE LISTING

#	NORTHING	EASTING	ELEV.	DESCRIPTION
281	2187558.3651	6109520.3544	267.53	314-SB3
282	2187763.1925	6109555.3572	261.33	314-SB4
3	2187718.5906	6109568.3132	263.19	18292-314A-533
4	2187738.9271	6109530.0089	256.10	18292-314A-528
5	2187757.5473	6109546.9576	261.21	18292-314A-533
6	2187741.1858	6109543.1218	262.60	18292-314A-532
7	2187714.3285	6109532.9479	254.46	18292-314A-528
8	2187684.7311	6109542.8244	255.93	18292-314A-530
103	2187723.7849	6109514.1667	248.88	314B-421
104	2187725.4727	6109504.2071	249.19	314B-420
105	2187740.6882	6109507.6131	249.07	314B-424
106	2187751.0439	6109524.4698	249.53	314B-423
107	2187744.1043	6109527.8933	249.43	314B-422
284	2187687.9277	6109616.3184	265.24	314-SB4
285	2187701.0767	6109625.6240	265.02	314-SB8
286	2187707.9253	6109633.3823	265.24	314-SB3
287	2187696.0738	6109633.9679	265.32	314-SB0

REVISIONS		
REV NO.	DESCRIPTION	DATE
1	INCLUDE ADDITIONAL GEOPHYS/EXCAVATION	10-25-97
2	FINAL SUBMITTAL	11-4-97
3	ADDITIONAL SAMPLES/FINAL SUBMITTAL	7-25-98

- LEGEND**
- ◆ SAMPLE LOCATION (8-15-97)
  - ◆ SAMPLE LOCATION (8-15-97)
  - ◆ SAMPLE LOCATION (8-21-97)
  - ◆ SAMPLE LOCATION (10-22-97)
  - 8-15-97 SURVEY
  - 8-21-97 SURVEY
  - 8-15-97 SURVEY
  - 10-22-97 SURVEY
  - SEWER LINE
  - GAS LINE
  - FS FINISH SURFACE
  - NG NATURAL GRADE



*Edward L. Schenet*

EDWARD L. SCHENET  
 Registration No. 4240  
 in the State of California

***Appendix G***  
***Laboratory Analytical Results for TAA***  
***Effluent Treated Water***



Applied P & Ch Laboratory  
**Organic Analysis Results for Method M8015V**

Client Name: OHM Remediation Services (Irvine)	Project No: 18609	Collection Date: 05/07/98
Project ID: TAA Rinse Water	Service ID: 982777	Collected by: M.B.
Sample ID: 18609-895	Lab Sample ID: 98-2777-1	Received Date: 05/07/98
Sample Type: Field Sample	Sample Matrix: Water	Moisture %: -
Anal. Method: M8015V	Prep. Method: 5030	Instrument ID: GC: N
Batch No: 98G2191	Prep. Date: 05/08/98	Anal. Date: 05/08/98
Data File Name: 2777.001	Prep. No: -	Anal. Time: 17:00
Methanol Vol. -	Sample Amount: 5 mL	Dilution Factor: 1
Test Level: Low	Sparge Size: 5 mL	Heated Purge: (Y/N) N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	GASOLINE	8006-61-9	mg/L	0.05	<0.05	U
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	4-BROMO-FLUOROBENZENE (BFB)	460-00-4		71-134	92	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL	E - Exceed calibration range
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)	B - A positive value was found in the method blank
	D - Diluted

72256

Applied P & Ch Laboratory  
**Organic Analysis Results for Method M8015E**

Client Name: OHM Remediation Services (Irvine)	Project No: 18609	Collection Date: 05/07/98
Project ID: TAA Rinse Water	Service ID: 982777	Collected by: M.B.
Sample ID: 18609-895	Lab Sample ID: 98-2777-1	Received Date: 05/07/98
Sample Type: Field Sample	Sample Matrix: Water	Moisture %: -
Anal. Method: M8015E	Prep. Method: 3510	Instrument ID: GC: H
Batch No: 98G2255	Prep. Date: 05/08/98	Anal. Date: 05/09/98
Data File Name: 2777.001	Prep. No: 1 of 1	Anal. Time: 04:30
Extract Vol. 1.0 mL	Sample Amount: 1000 mL	Dilution Factor: 1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	TPH AS DIESEL	68334-30-5	mg/L	0.5	0.4	J
2	TPH AS MOTOR OIL	TBD-0002	mg/L	0.5	<0.5	U
<b>Surrogates</b>				<b>Control Limit, %</b>	<b>Surro. Rec.%</b>	
1	OCTACOSANE, C <sub>28</sub>	630-02-4		50-149	67	
# of out-of-control					0	

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL	E - Exceed calibration range
J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)	B - A positive value was found in the method blank
	D - Diluted

72298

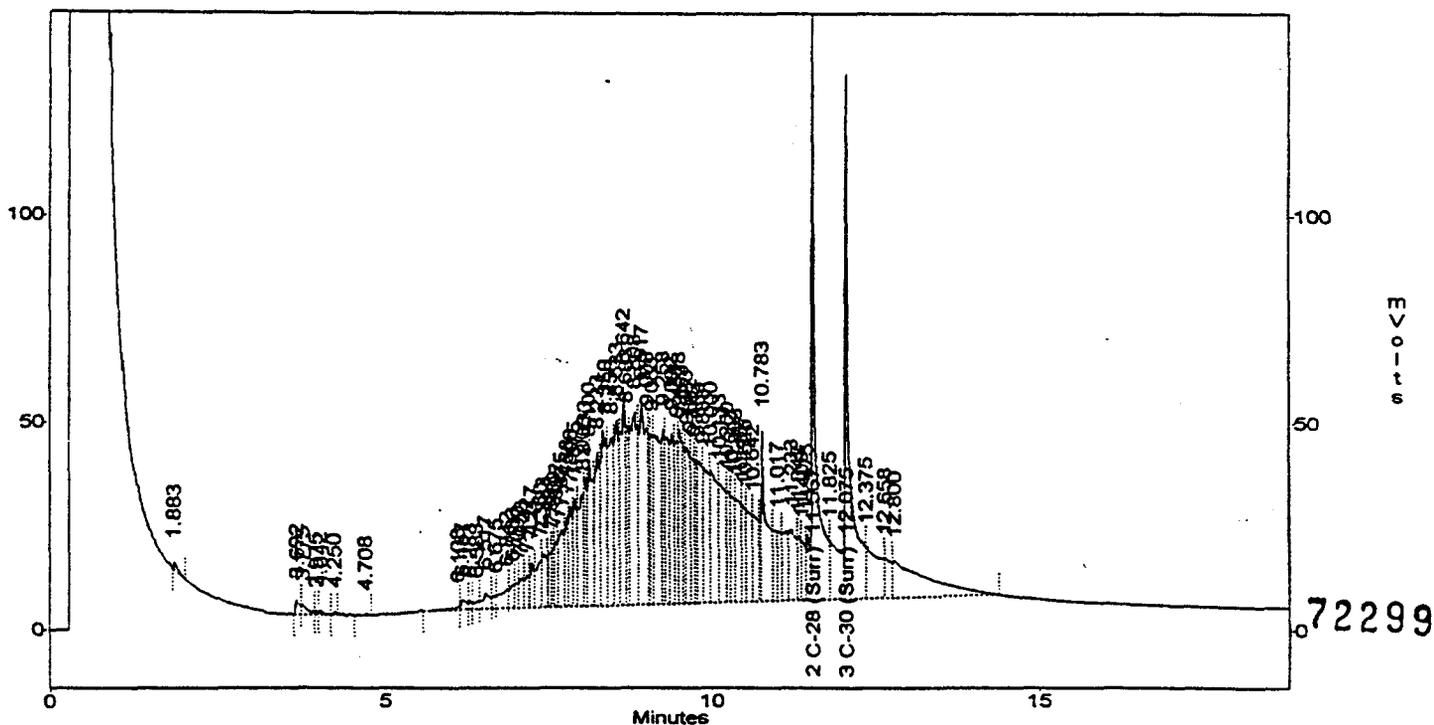
Applied P & Ch Lab  
 Total Extractable Petroleum Hydrocarbon Analysis by GC-FID  
 Instrument ID: GC-H, Column: DB-1 (0.32mm x 15m x 0.25 um), 1ul

File : c:\data\9805\ds12h\98g2227\2777.001  
 Method : c:\ezchrom\methods\ds12-032.h00  
 Sample ID : 2771-1 f=0.001  
 Vial : 19  
 Volume : 1  
 Acquired : May 09, 1998 04:30:09  
 Printed : May 11, 1998 15:29:28  
 User : System

Channel B Results

Name	Time	Area	Conc (ppm)
2 C-28 (Surr)	11.57	568707	33.572
3 C-30 (Surr)	12.07	559380	34.213
1 DIESEL		6128528	406.124
4 MOTOR OIL		0	0.000

c:\data\9805\ds12h\98g2227\2777.001 -- Channel B



Applied P & Ch Laboratory  
**Organic Analysis Results for Method 8260**

Client Name: OHM Remediation Services (Irvine)	Project No: 18609	Collection Date: 05/07/98
Project ID: TAA Rinse Water	Service ID: 982777	Collected by: M.B.
Sample ID: 18609-895	Lab Sample ID: 98-2777-1	Received Date: 05/07/98
Sample Type: Field Sample	Sample Matrix: Water	Moisture %: -
Anal. Method: 8260	Prep. Method: 5030	Instrument ID: GC/MS: G
Batch No: 98G2263	Prep. Date: 05/10/98	Anal. Date: 05/10/98
Data File Name: 2777-01	Prep. No: -	Anal. Time: 02:27
Methanol Vol: -	Sample Amount: 25 mL	Dilution Factor: 1
Test Level: Low	Sparge Size: 25 mL	Heated Purge: (Y/N) N

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	BENZENE	71-43-2	µg/L	5	<5	U
2	BROMOBENZENE	108-86-1	µg/L	5	<5	U
3	BROMOCHLOROMETHANE	74-97-5	µg/L	5	<5	U
4	BROMODICHLOROMETHANE	75-27-4	µg/L	5	<5	U
5	BROMOFORM	75-25-2	µg/L	5	<5	U
6	BROMOMETHANE	74-83-9	µg/L	5	<5	U
7	N-BUTYLBENZENE	104-51-8	µg/L	5	<5	U
8	SEC-BUTYLBENZENE	135-98-8	µg/L	5	<5	U
9	TERT-BUTYLBENZENE	98-06-6	µg/L	5	<5	U
10	CARBON TETRACHLORIDE	56-23-5	µg/L	5	<5	U
11	CHLOROBENZENE	108-90-7	µg/L	5	<5	U
12	DIBROMOCHLOROMETHANE	124-48-1	µg/L	5	<5	U
13	CHLOROETHANE	75-00-3	µg/L	5	<5	U
14	CHLOROFORM	67-66-3	µg/L	5	<5	U
15	CHLOROMETHANE	74-87-3	µg/L	5	<5	U
16	2-CHLOROTOLUENE	95-49-8	µg/L	5	<5	U
17	4-CHLOROTOLUENE	106-43-4	µg/L	5	<5	U
18	1,2-DIBROMO-3-CHLOROPROPANE (DB)	96-12-8	µg/L	5	<5	U
19	1,2-DIBROMOETHANE (EDB)	106-93-4	µg/L	5	<5	U
20	DIBROMOMETHANE	74-95-3	µg/L	5	<5	U
21	1,2-DICHLOROENZENE	95-50-1	µg/L	5	<5	U
22	1,3-DICHLOROENZENE	541-73-1	µg/L	5	<5	U
23	1,4-DICHLOROENZENE	106-46-7	µg/L	5	<5	U
24	DICHLORODIFLUOROMETHANE	75-71-8	µg/L	5	<5	U
25	1,1-DICHLOROETHANE	75-34-3	µg/L	5	<5	U
26	1,2-DICHLOROETHANE	107-06-2	µg/L	5	<5	U
27	1,1-DICHLOROETHENE	75-35-4	µg/L	5	<5	U
28	CIS-1,2-DICHLOROETHENE	156-59-2	µg/L	5	<5	U
29	TRANS-1,2-DICHLOROETHENE	156-60-5	µg/L	5	<5	U
30	1,2-DICHLOROPROPANE	78-87-5	µg/L	5	<5	U
31	1,3-DICHLOROPROPANE	142-28-9	µg/L	5	<5	U
32	2,2-DICHLOROPROPANE	594-20-7	µg/L	5	<5	U
33	1,1-DICHLOROPROPENE	563-58-6	µg/L	5	<5	U
34	CIS-1,3-DICHLOROPROPENE	10061-01-5	µg/L	5	<5	U
35	TRANS-1,3-DICHLOROPROPENE	10061-02-6	µg/L	5	<5	U
36	ETHYLBENZENE	100-41-4	µg/L	5	<5	U
37	HEXACHLOROBUTADIENE	87-68-3	µg/L	5	<5	U
38	ISOPROPYLBENZENE (CUMENE)	98-82-8	µg/L	5	<5	U
39	P-ISOPROPYLTOLUENE	99-87-6	µg/L	5	<5	U

72112

#	Component Name	CAS No	Unit	RL	Result	Qualifier
40	METHYLENE CHLORIDE	75-09-2	µg/L	5	<5	U
41	NAPHTHALENE	91-20-3	µg/L	5	<5	U
42	N-PROPYLBENZENE	103-65-1	µg/L	5	<5	U
43	STYRENE	100-42-5	µg/L	5	<5	U
44	1,1,1,2-TETRACHLOROETHANE	630-20-6	µg/L	5	<5	U
45	1,1,2,2-TETRACHLOROETHANE	79-34-5	µg/L	5	<5	U
46	TETRACHLOROETHENE	127-18-4	µg/L	5	<5	U
47	TOLUENE	108-88-3	µg/L	5	<5	U
48	1,2,3-TRICHLOROBENZENE	87-61-6	µg/L	5	<5	U
49	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	5	<5	U
50	1,1,1-TRICHLOROETHANE	71-55-6	µg/L	5	<5	U
51	1,1,2-TRICHLOROETHANE	79-00-5	µg/L	5	<5	U
52	TRICHLOROETHENE	79-01-6	µg/L	5	<5	U
53	TRICHLOROFLUOROMETHANE	75-69-4	µg/L	5	<5	U
54	1,2,3-TRICHLOROPROPANE	96-18-4	µg/L	5	<5	U
55	1,2,4-TRIMETHYLBENZENE	95-63-6	µg/L	5	<5	U
56	1,3,5-TRIMETHYLBENZENE	108-67-8	µg/L	5	<5	U
57	VINYL CHLORIDE	75-01-4	µg/L	5	<5	U
58	O-XYLENE	95-47-6	µg/L	5	<5	U
59	M/P-XYLENE	108-38-3	µg/L	5	<5	U
60	XYLENES (TOTAL)	1330-20-7	µg/L	5	<5	U

Surrogates			Control Limit, %	Surro. Rec.%
1	4-BROMO-FLUOROBENZENE (BFB)	460-00-4	86-114	103
2	DIBROMOFLUOROMETHANE	1868-53-7	86-117	101
3	1,2-DICHLOROETHANE-D4	17060-07-0	80-119	101
4	TOLUENE-D8	2037-26-5	88-109	105
# of out-of-control				0
Internal Standard			Control Limit, %	IS Rec.%
1	CHLOROENZENE-D5	3114-55-4	50-200	87
2	1,4-DICHLOROENZENE-D4	3855-82-1	50-200	92
3	FLUOROENZENE	462-06-6	50-200	95
# of out-of-control				0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

72113

Applied P & Ch Laboratory  
**Organic Analysis Results for Method 8270**

Client Name: OHM Remediation Services (Irvine)	Project No: 18609	Collection Date: 05/07/98
Project ID: TAA Rinse Water	Service ID: 982777	Collected by: M.B.
Sample ID: 18609-895	Lab Sample ID: 98-2777-1	Received Date: 05/07/98
Sample Type: Field Sample	Sample Matrix: Water	Moisture %: -
Anal. Method: 8270	Prep. Method: 3510	Instrument ID: GC/MS: D
Batch No: 98G2274	Prep. Date: 05/11/98	Anal. Date: 05/11/98
Data File Name: 2777-01	Prep. No: 1 of 1	Anal. Time: 22:52
Extract Vol. 1.0 mL	Sample Amount: 1000 mL	Dilution Factor: 1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	ACENAPHTHENE	83-32-9	µg/L	10	<10	U
2	ACENAPHTHYLENE	208-96-8	µg/L	10	<10	U
3	ACETOPHENONE	98-86-2	µg/L	10	<10	U
4	4-AMINOBIHENYL	92-67-1	µg/L	10	<10	U
5	ANILINE	62-53-3	µg/L	10	<10	U
6	ANTHRACENE	120-12-7	µg/L	10	<10	U
7	BENZO[A]ANTHRACENE	56-55-3	µg/L	10	<10	U
8	BENZIDINE	92-87-5	µg/L	20	<20	U
9	BENZO[A]PYRENE	50-32-8	µg/L	10	<10	U
10	BENZO[B]FLUORANTHENE	205-99-2	µg/L	10	<10	U
11	BENZO[G,H,I]PERYLENE	191-24-2	µg/L	10	<10	U
12	BENZO[K]FLUORANTHENE	207-08-9	µg/L	10	<10	U
13	BENZOIC ACID	65-85-0	µg/L	50	<50	U
14	BENZYL ALCOHOL	100-51-6	µg/L	20	<20	U
15	BIS(2-CHLOROETHOXY)METHANE	111-91-1	µg/L	10	<10	U
16	BIS(2-CHLOROETHYL)ETHER	111-44-4	µg/L	10	<10	U
17	BIS(2-CHLOROISOPROPYL)ETHER	108-60-1	µg/L	10	<10	U
18	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	µg/L	10	4	J
19	4-BROMOPHENYL PHENYL ETHER	101-55-3	µg/L	10	<10	U
20	BUTYL BENZYL PHTHALATE	85-68-7	µg/L	10	<10	U
21	3-METHYL-4-CHLOROPHENOL	59-50-7	µg/L	20	<20	U
22	4-CHLOROANILINE	106-47-8	µg/L	20	<20	U
23	1-CHLORONAPHTHALENE	90-13-1	µg/L	10	<10	U
24	2-CHLORONAPHTHALENE	91-58-7	µg/L	10	<10	U
25	2-CHLOROPHENOL	95-57-8	µg/L	10	<10	U
26	4-CHLOROPHENYL PHENYL ETHER	7005-72-3	µg/L	10	<10	U
27	CHRYSENE	218-01-9	µg/L	10	<10	U
28	DI-N-BUTYLPHTHALATE	84-74-2	µg/L	10	<10	U
29	DI-N-OCTYLPHTHALATE	117-84-0	µg/L	10	<10	U
30	DIBENZ[A,H]ANTHRACENE	53-70-3	µg/L	10	<10	U
31	DIBENZ(A,J)ACRIDINE	224-42-0	µg/L	10	<10	U
32	DIBENZOFURAN	132-64-9	µg/L	10	<10	U
33	1,2-DICHLOROBENZENE	95-50-1	µg/L	10	<10	U
34	1,3-DICHLOROBENZENE	541-73-1	µg/L	10	<10	U
35	1,4-DICHLOROBENZENE	106-46-7	µg/L	10	<10	U
36	3,3'-DICHLOROBENZIDINE	91-94-1	µg/L	10	<10	U
37	2,4-DICHLOROPHENOL	120-83-2	µg/L	10	<10	U
38	2,6-DICHLOROPHENOL	87-65-0	µg/L	10	<10	U
39	DIETHYL PHTHALATE	84-66-2	µg/L	10	<10	U
40	DIMETHYL PHTHALATE	131-11-3	µg/L	10	<10	U

72152

#	Component Name	CAS No	Unit	RL	Result	Qualifier
41	P-DIMETHYLAMINOAZOBENZENE	60-11-7	µg/L	10	<10	U
42	7,12-DIMETHYLBENZ(A)ANTHRACENE	57-97-6	µg/L	10	<10	U
43	2,4-DIMETHYLPHENOL	105-67-9	µg/L	10	<10	U
44	Å-DIMETHYLPHENYLAMINE	122-09-8	µg/L	50	<50	U
45	2-METHYL-4,6-DINITROPHENOL	534-52-1	µg/L	50	<50	U
46	2,4-DINITROPHENOL	51-28-5	µg/L	50	<50	U
47	2,4-DINITROTOLUENE	121-14-2	µg/L	10	<10	U
48	2,6-DINITROTOLUENE	606-20-2	µg/L	10	<10	U
49	DIPHENYLAMINE	122-39-4	µg/L	10	<10	U
50	1,2-DIPHENYLHYDRAZINE	122-66-7	µg/L	10	<10	U
51	ETHYL METHANESULFONATE	62-50-0	µg/L	10	<10	U
52	FLUORANTHENE	206-44-0	µg/L	10	<10	U
53	FLUORENE	86-73-7	µg/L	10	<10	U
54	HEXACHLOROBENZENE	118-74-1	µg/L	10	<10	U
55	HEXACHLOROBUTADIENE	87-68-3	µg/L	10	<10	U
56	HEXACHLOROCYCLOPENTADIENE	77-47-4	µg/L	10	<10	U
57	HEXACHLOROETHANE	67-72-1	µg/L	10	<10	U
58	INDENO[1,2,3-CD]PYRENE	193-39-5	µg/L	10	<10	U
59	ISOPHORONE	78-59-1	µg/L	10	<10	U
60	METHYL METHANESULFONATE	66-27-3	µg/L	10	<10	U
61	3-METHYLCHOLANTHRENE	56-49-5	µg/L	10	<10	U
62	2-METHYLNAPHTHALENE	91-57-6	µg/L	10	<10	U
63	4-METHYLPHENOL	106-44-5	µg/L	10	<10	U
64	2-METHYLPHENOL	95-48-7	µg/L	10	<10	U
65	NAPHTHALENE	91-20-3	µg/L	10	<10	U
66	1-NAPHTHYLAMINE	134-32-7	µg/L	10	<10	U
67	2-NAPHTHYLAMINE	91-59-8	µg/L	10	<10	U
68	2-NITROANILINE	88-74-4	µg/L	50	<50	U
69	3-NITROANILINE	99-09-2	µg/L	50	<50	U
70	4-NITROANILINE	100-01-6	µg/L	50	<50	U
71	NITROBENZENE	98-95-3	µg/L	10	<10	U
72	2-NITROPHENOL	88-75-5	µg/L	10	<10	U
73	4-NITROPHENOL	100-02-7	µg/L	50	<50	U
74	N-NITROSODI-N-PROPYLAMINE	621-64-7	µg/L	10	<10	U
75	N-NITROSO-DI-N-BUTYLAMINE	924-16-3	µg/L	10	<10	U
76	N-NITROSODIMETHYLAMINE	62-75-9	µg/L	10	<10	U
77	N-NITROSODIPHENYLAMINE	86-30-6	µg/L	10	<10	U
78	N-NITROSOPIPERIDINE	100-75-4	µg/L	10	<10	U
79	PENTACHLOROBENZENE	608-93-5	µg/L	50	<50	U
80	PENTACHLOROPHENOL	87-86-5	µg/L	50	<50	U
81	PHENACETIN	62-44-2	µg/L	10	<10	U
82	PHENANTHRENE	85-01-8	µg/L	10	<10	U
83	PHENOL	108-95-2	µg/L	10	<10	U
84	2-PICOLINE	109-06-8	µg/L	20	<20	U
85	PRONAMIDE	23950-58-5	µg/L	10	<10	U
86	PYRENE	129-00-0	µg/L	10	<10	U
87	1,2,4,5-TETRACHLOROBENZENE	95-94-3	µg/L	10	<10	U
88	2,3,4,6-TETRACHLOROEPHENOL	58-90-2	µg/L	10	<10	U
89	1,2,4-TRICHLOROBENZENE	120-82-1	µg/L	10	<10	U
90	2,4,5-TRICHLOROPHENOL	95-95-4	µg/L	10	<10	U

72153

#	Component Name	CAS No	Unit	RL	Result	Qualifier
91	2,4,6-TRICHLOROPHENOL	88-06-2	µg/L	10	<10	U
Surrogates				Control Limit, %	Surro. Rec.%	
1	2-FLUOROBIPHENYL	321-60-8		43-115	53	
2	2-FLUOROPHENOL	367-12-4		21- 99	38	
3	NITROBENZENE-D5	4165-60-0		35-113	56	
4	PHENOL-D5	4165-62-2		10- 93	30	
5	TERPHENYL-D14	1718-51-0		33-140	72	
6	2,4,6-TRIBROMOPHENOL	118-79-6		10-122	55	
# of out-of-control						0
Internal Standard				Control Limit, %	IS Rec.%	
1	ACENAPHTHENE-D10	15067-26-2		50-200	68	
2	CHRYSENE-D12	1719-03-5		50-200	57	
3	1,4-DICHLOROBENZENE-D4	3855-82-1		50-200	69	
4	NAPHTHALENE-D8	1146-65-2		50-200	73	
5	PERYLENE-D12	1520-96-3		50-200	52	
6	PHENANTHRENE-D10	1517-22-2		50-200	58	
# of out-of-control						0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL

E - Exceed calibration range

J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)

B - A positive value was found in the method blank

D - Diluted

72154

Applied P & Ch Laboratory  
**Wet Analysis Results for Method 335.2**

Client Name: OHM Remediation Services (Irvine) Project No: 18609 Anal. Method 335.2  
Project ID: TAA Rinse Water Service ID: 982777 Collected by: M.B.

Component Name: CYANIDE  
CAS No: 5952-50-0

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-2777-1	18609-895	Water	05/07/98	05/07/98	05/11/98	98W2915	mg/L	0.05	<0.05	U
98W2915-MB-01	98W2915-MB-01	Water	05/11/98	05/11/98	05/11/98	98W2915	mg/L	0.05	<0.05	U

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Note: Q - Qualifier.

Qualifier: U - Not Detected or less than MDL

B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

72392

Applied P & Ch Laboratory  
Wet Analysis Results for Method 9040

Client Name: OHM Remediation Services (Irvine) Project No: 18609 Anal. Method 9040  
Project ID: TAA Rinse Water Service ID: 982777 Collected by: M.B.

Component Name: PH  
CAS No: 9999-90

Lab ID	Sample ID	Matrix	Coll. Date	Rcv Date	Anal. Date	Batch	Unit	RL	Result	Q
98-2777-1	18609-895	Water	05/07/98	05/07/98	05/08/98	98W2869	pH unit	0.01	8.15	
98W2869-MB-01	98W2869-MB-01	Water	05/08/98	05/08/98	05/08/98	98W2869	pH unit	0.01	6.56	

Note: Q - Qualifier.  
Qualifier: U - Not Detected or less than MDL  
B - Less than RL (PQL, EQL or CRDL), but greater than MDL.

72393

Applied P & Ch Laboratory  
**Metal Analysis Results**

Client Name: OHM Remediation Services (Irvine) Project No: 18609 Collection Date: 05/07/98  
 Project ID: TAA Rinse Water Service ID: 982777 Collected by: M.B.  
 Lab Sample ID: 98-2777-1 Received Date: 05/07/98  
 Sample ID: 18609-895 Sample Matrix: Water Moisture %: -  
 Sample Type: Field Sample

Element Name	CAS No	Unit	RL	Result	C	M	Q	Batch	D-Date	A-Date	DF	Method
ANTIMONY	7440-36-0	µg/L	10	<1.9	U	P		98M1447M	05/08/98	05/08/98	1	6010
ARSENIC	7440-38-2	µg/L	5	<1.1	U	P		98M1447M	05/08/98	05/08/98	1	6010
BARIUM	7440-39-3	µg/L	10	35.2		P		98M1447M	05/08/98	05/08/98	1	6010
BERYLLIUM	7440-41-7	µg/L	2	<0.1	U	P		98M1447M	05/08/98	05/08/98	1	6010
CADMIUM	7440-43-9	µg/L	2	0.38	B	P		98M1447M	05/08/98	05/08/98	1	6010
CHROMIUM	7440-47-3	µg/L	5	0.70	B	P		98M1447M	05/08/98	05/08/98	1	6010
COBALT	7440-48-4	µg/L	5	<0.3	U	P		98M1447M	05/08/98	05/08/98	1	6010
COPPER	7440-50-8	µg/L	10	13.8		P		98M1447M	05/08/98	05/08/98	1	6010
LEAD	7439-92-1	µg/L	5	<0.7	U	P		98M1447M	05/08/98	05/08/98	1	6010
MERCURY	7439-97-6	µg/L	0.5	<0.13	U	CV		98M1453D	05/11/98	05/11/98	1	7470
MOLYBDENUM	7439-98-7	µg/L	5	9.3		P		98M1447M	05/08/98	05/08/98	1	6010
NICKEL	7440-02-0	µg/L	5	2.9	B	P		98M1447M	05/08/98	05/08/98	1	6010
SELENIUM	7782-49-2	µg/L	10	<1.5	U	P		98M1447M	05/08/98	05/08/98	1	6010
SILVER	7440-22-4	µg/L	10	<1.1	U	P		98M1447M	05/08/98	05/08/98	1	6010
THALLIUM	7440-28-0	µg/L	10	2.2	B	P		98M1447M	05/08/98	05/08/98	1	6010
VANADIUM	7440-62-2	µg/L	10	<0.91	U	P		98M1447M	05/08/98	05/08/98	1	6010
ZINC	7440-66-6	µg/L	5	30.4		P		98M1447M	05/08/98	05/08/98	1	6010

Not Detected is shown as IDL moisture-corrected if applicable

Note: RL: PQL (EQL) or CRDL D-Date: Digestion Date; A-Date: Analysis Date; DF: Dilution Factor  
 C Qualifier: U - Not Detected or less than IDL B - Less than RL (PQL, EQL or CRDL), but greater than IDL.  
 Q Qualifier: N - Spike recovery out of control \* - Duplicate analysis out of control  
 W - Post digestion spike for GFAA out of control E - Serial dilution difference out of control  
 M Qualifier: P - ICP A - FLAA F - GFAA CV - Cold Vapor

72345

Applied P & Ch Laboratory  
**Organic Analysis Results for Method 8080**

Client Name: OHM Remediation Services (Irvine)	Project No: 18609	Collection Date: 05/07/98
Project ID: TAA Rinse Water	Service ID: 982777	Collected by: M.B.
Sample ID: 18609-895	Lab Sample ID: 98-2777-1	Received Date: 05/07/98
Sample Type: Field Sample	Sample Matrix: Water	Moisture %: -
Anal. Method: 8080	Prep. Method: 3510	Instrument ID: GC: R
Batch No: 98G2249	Prep. Date: 05/08/98	Anal. Date: 05/09/98
Data File Name: 2777.001	Prep. No: 1 of 1	Anal. Time: 06:35
Extract Vol. 1.0 mL	Sample Amount: 1000 mL	Dilution Factor: 1

#	Component Name	CAS No	Unit	RL	Result	Qualifier
1	ALDRIN	309-00-2	µg/L	0.05	<0.05	U
2	BETA-BHC	319-85-7	µg/L	0.05	<0.05	U
3	ALPHA-BHC	319-84-6	µg/L	0.05	<0.05	U
4	DELTA-BHC	319-86-8	µg/L	0.05	<0.05	U
5	GAMMA-BHC	58-89-9	µg/L	0.05	<0.05	U
6	4,4'-DDD	72-54-8	µg/L	0.1	<0.1	U
7	4,4'-DDE	72-55-9	µg/L	0.1	<0.1	U
8	4,4'-DDT	50-29-3	µg/L	0.1	<0.1	U
9	DIELDRIN	60-57-1	µg/L	0.1	<0.1	U
10	ENDOSULFAN I	959-98-8	µg/L	0.05	<0.05	U
11	ENDOSULFAN II	33213-65-9	µg/L	0.1	<0.1	U
12	ENDOSULFAN SULFATE	1031-07-8	µg/L	0.5	<0.5	U
13	ENDRIN	72-20-8	µg/L	0.1	<0.1	U
14	ENDRIN ALDEHYDE	7421-93-4	µg/L	0.1	<0.1	U
15	ENDRIN KETONE	53494-70-5	µg/L	0.1	<0.1	U
16	HEPTACHLOR	76-44-8	µg/L	0.05	<0.05	U
17	HEPTACHLOR EPOXIDE	1024-57-3	µg/L	0.05	<0.05	U
18	METHOXYCHLOR	72-43-5	µg/L	2	<2	U
19	CHLORDANE	57-74-9	µg/L	2	<2	U
20	TOXAPHENE	8001-35-2	µg/L	5	<5	U
21	AROCLOR-1016	12674-11-2	µg/L	2	<2	U
22	AROCLOR-1221	11104-28-2	µg/L	5	<5	U
23	AROCLOR-1232	11141-16-5	µg/L	2	<2	U
24	AROCLOR-1242	53469-21-9	µg/L	2	<2	U
25	AROCLOR-1248	12672-29-6	µg/L	2	<2	U
26	AROCLOR-1254	11097-69-1	µg/L	1	<1	U
27	AROCLOR-1260	11096-82-5	µg/L	1	<1	U

Surrogates		Control Limit, %	Surro. Rec.%
1	DECACHLOROBIPHENYL (DCB) 2051-24-3	30-145	78
2	2,4,5,6-TETRACHLORO-M-XYLENE 877-09-8	34-144	76
# of out-of-control			0

Internal Standard		Control Limit, %	IS Rec.%
1	DIBUTYLCHLORENDATE (DBC) 1770-80-5	50-200	79
# of out-of-control			0

Not Detected is shown as PQL, with dilution and moisture corrected if applicable.

Qualifier: U - Not Detected or less than MDL  
 J - Less than RL (PQL, EQL or CRDL), but greater than MDL, or an estimated result (e.g. for TIC)  
 E - Exceed calibration range  
 B - A positive value was found in the method blank  
 D - Diluted

72195

***Appendix H***  
***Laboratory Analytical Results***



000137

SAMPLE NO: 9710387\*10

Received: 10.17.97

Mailed : 11.04.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 260411  
Req#: D0#0070  
Project: 18609-002

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 11

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710387\*10      18609-628      10.16.97  
-----

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PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

Mod 8015 - Gas

TPH (Gasoline Range)      8015M      10.22.97    1      mg/kg      12    U  
Surrogates .\*\*  
a,a,a-Trifluorotoluene Rep.    8015M      10.22.97    1      Percent      112  
-----

SAMPLE NO: 9710387\*10

Received: 10.17.97

Mailed : 11.04.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 260411  
Req#: D0#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 10

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*10      18609-628      10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

JP-5

4 (Diesel Range)	8015M	10.21.97	10.23.97	1	mg/kg	12	U
5	8015M	10.21.97	10.23.97	1	mg/kg	12	U
Surrogates **							
Naphthalene Reported	8015M	10.21.97	10.23.97	1	Percent	84	
o-Terphenyl Reported	8015M	10.21.97	10.23.97	1	Percent	94	

SAMPLE NO: 9710387\*10

Received: 10.17.97

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Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 12

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*10      18609-628      10.16.97  
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-----  
PARAMETER                      METHOD    PREPED    ANALYZED    DIL            UNITS            RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1,2,2-Tetrachloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1,2-Trichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1-Dichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1-Dichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
1,2-Dichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,2-Dichloropropane	8260A		10.23.97	1	ug/kg	5.8	U
2-Chloroethylvinylether	8260A		10.23.97	1	ug/kg	58	U
2-Hexanone	8260A		10.23.97	1	ug/kg	58	U
Acetone	8260A		10.23.97	1	ug/kg	23	J
Bromodichloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Bromomethane	8260A		10.23.97	1	ug/kg	5.8	U
Benzene	8260A		10.23.97	1	ug/kg	5.8	U
Bromoform	8260A		10.23.97	1	ug/kg	5.8	U
Chlorobenzene	8260A		10.23.97	1	ug/kg	5.8	U
Carbon Tetrachloride	8260A		10.23.97	1	ug/kg	5.8	U
Chloroethane	8260A		10.23.97	1	ug/kg	5.8	U
Chloroform	8260A		10.23.97	1	ug/kg	5.8	U
Chloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Carbon Disulfide	8260A		10.23.97	1	ug/kg	5.8	U
Dibromochloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Ethylbenzene	8260A		10.23.97	1	ug/kg	5.8	U
Methyl ethyl ketone	8260A		10.23.97	1	ug/kg	58	U
Methyl isobutyl ketone	8260A		10.23.97	1	ug/kg	58	U

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SAMPLE NO: 9710387\*10

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P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 13

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*10 18609-628 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Volatiles

Methyl-tert-butylether	8260A		10.23.97	1	ug/kg	12	U
ethylene chloride	8260A		10.23.97	1	ug/kg	5.8	U
styrene	8260A		10.23.97	1	ug/kg	5.8	U
Trichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
Toluene	8260A		10.23.97	1	ug/kg	5.8	U
Tetrachloroethene	8260A		10.23.97	1	ug/kg	5.8	U
Vinyl acetate	8260A		10.23.97	1	ug/kg	12	U
Vinyl chloride	8260A		10.23.97	1	ug/kg	5.8	U
Total Xylene Isomers	8260A		10.23.97	1	ug/kg	17	U
cis-1,2-Dichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
cis-1,3-Dichloropropene	8260A		10.23.97	1	ug/kg	5.8	U
trans-1,2-Dichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
trans-1,3-Dichloropropene	8260A		10.23.97	1	ug/kg	5.8	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.23.97	1	Percent	86	
4-Bromofluorobenzene Rep.	8260A		10.23.97	1	Percent	101	
Toluene-d8 Reported	8260A		10.23.97	1	Percent	94	
Dibromofluoromethane Rep.	8260A		10.23.97	1	Percent	95	

SAMPLE NO: 9710387\*10

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P.O.#: 260411  
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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 4

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*10 18609-628 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

1,2,4-Trichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
1,2-Dichlorobenzene -96	8270B	10.21.97	10.23.97	1	ug/kg	380	U
1,3-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
1,4-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4,5-Trichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4,6-Trichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4-Dichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4-Dimethylphenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4-Dinitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	970	U
2,4-Dinitrotoluene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,6-Dinitrotoluene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Chloronaphthalene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Chlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Methyl-4,6-dinitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	970	U
2-Methylnaphthalene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Methylphenol (o-Cresol)	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Nitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
3,3'-Dichlorobenzidine	8270B	10.21.97	10.23.97	1	ug/kg	380	U
3-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Bromophenylphenylether	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Chloro-3-methylphenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Chloroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Chlorophenylphenylether	8270B	10.21.97	10.23.97	1	ug/kg	380	U

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P.O.#: 260411  
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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 5

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*10      18609-628      10.16.97  
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

4-Methylphenol (p-Cresol)	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Nitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	970	U
Acenaphthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Acenaphthylene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Anthracene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(a)anthracene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(b)fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(g,h,i)perylene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(k)fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Butylbenzylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Chrysene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Di-n-octylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Dibenzofuran	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Dibutylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	310	J
Diethylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Dimethylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Fluorene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachlorobutadiene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachlorocyclopentadiene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachloroethane	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Indeno(1,2,3-c,d)pyrene	8270B	10.21.97	10.23.97	1	ug/kg	380	U

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SAMPLE NO: 9710387\*10

Received: 10.17.97  
Mailed : 11.04.97Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614P.O.#: 260411  
Req#: D0#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 6

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE	DATE SAMPLED
9710387*10 18609-628	10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

N-Nitrosodiphenylamine	SM	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Nitrobenzene	SM	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Naphthalene		8270B	10.21.97	10.23.97	1	ug/kg	380	U
Phenanthrene		8270B	10.21.97	10.23.97	1	ug/kg	380	U
Phenol		8270B	10.21.97	10.23.97	1	ug/kg	380	U
Pentachlorophenol		8270B	10.21.97	10.23.97	1	ug/kg	770	U
Pyrene		8270B	10.21.97	10.23.97	1	ug/kg	380	U
Bis(2-chloroethoxy)methane		8270B	10.21.97	10.23.97	1	ug/kg	380	U
Bis(2-chloroisopropyl)ether		8270B	10.21.97	10.23.97	1	ug/kg	380	U
Bis(2-ethylhexyl)phthalate		8270B	10.21.97	10.23.97	1	ug/kg	380	U
Surrogates **								
2-Fluorobiphenyl Reported		8270B	10.21.97	10.23.97	1	Percent	98	
2-Fluorophenol Reported		8270B	10.21.97	10.23.97	1	Percent	80	
2,4,6-Tribromophenol Rep.		8270B	10.21.97	10.23.97	1	Percent	101	
Nitrobenzene-d5 Reported		8270B	10.21.97	10.23.97	1	Percent	88	
Phenol-d5 Reported		8270B	10.21.97	10.23.97	1	Percent	93	
Terphenyl-d14 Reported		8270B	10.21.97	10.23.97	1	Percent	95	

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*10      18609-628      10.16.97  
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)  
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## Compounds by SIM

Benzo(a)pyrene	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
Benzo(a,h)anthracene	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
Nitrosodi-n-propylamine	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
Bis(2-chloroethyl)ether	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
Surrogates **							
2-Fluorobiphenyl Reported	8270.S	10.21.97	10.25.97	1	Percent	56	
Terphenyl-d14 Reported	8270.S	10.21.97	10.25.97	1	Percent	74	

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000133

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 7

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*10 18609-628 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

## Pesticides

Aldrin	M-4	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
p,p'-DDD	M-4	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
p,p'-DDE		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
p,p'-DDT		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Dieldrin		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endosulfan I		8081	10.20.97	10.23.97	1	ug/kg	0.81	U
Endosulfan II		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endosulfan sulfate		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endrin		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endrin aldehyde		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Heptachlor epoxide		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Heptachlor		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Methoxychlor		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, alpha isomer		8081	10.20.97	10.23.97	1	ug/kg	0.81	U
alpha-Chlordane		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, beta isomer		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, delta isomer		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, gamma isomer (Lindane)		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
gamma-Chlordane		8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Surrogates **								
Decachlorobiphenyl Reported		8081	10.20.97	10.23.97	1	Percent	116	
Tetrachloro-meta-xylene Rpt		8081	10.20.97	10.23.97	1	Percent	89	

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 8

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*10 18609-628 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Pesticides Confirmation

Aldrin	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
'-DDD	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
p,p'-DDE	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
p,p'-DDT	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Dieldrin	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endosulfan I	8081	10.20.97	10.23.97	1	ug/kg	0.81	U
Endosulfan II	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endosulfan sulfate	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endrin	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Endrin aldehyde	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Heptachlor epoxide	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Heptachlor	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Methoxychlor	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, alpha isomer	8081	10.20.97	10.23.97	1	ug/kg	0.81	U
alpha-Chlordane	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, beta isomer	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, delta isomer	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
BHC, gamma isomer (Lindane)	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
gamma-Chlordane	8081	10.20.97	10.23.97	1	ug/kg	2.3	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.20.97	10.23.97	1	Percent	117	
Tetrachloro-meta-xylene Rpt	8081	10.20.97	10.23.97	1	Percent	81	

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 9

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*10      18609-628      10.16.97  
-----

PARAMETER      METHOD      PREPED      ANALYZED      DIL      UNITS      RESULT      FLG  
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(Following results reported on the basis of 14.0% moisture)

## Polychlorinated Biphenyls

Aroclor 1016		8081	10.20.97	10.23.97	1	ug/kg	38	U
Aroclor 1221	diu	8081	10.20.97	10.23.97	1	ug/kg	38	U
Aroclor 1232	W-V	8081	10.20.97	10.23.97	1	ug/kg	38	U
Aroclor 1242		8081	10.20.97	10.23.97	1	ug/kg	38	U
Aroclor 1248		8081	10.20.97	10.23.97	1	ug/kg	38	U
Aroclor 1254		8081	10.20.97	10.23.97	1	ug/kg	38	U
Aroclor 1260		8081	10.20.97	10.23.97	1	ug/kg	38	U
Surrogates **								
Decachlorobiphenyl Reported		8081	10.20.97	10.23.97	1	Percent	116	
Tetrachloro-meta-xylene Rpt		8081	10.20.97	10.23.97	1	Percent	89	

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000127  
ANALYTICAL REPORT

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DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 1

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*10      18609-628      10.16.97  
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

Total Cyanide	9010A	10.23.97	10.23.97	1	mg/kg	0.58	U
pH	9045		10.21.97	1	Units	8.4	
-Moisture/TNFR	D2216		10.23.97	1	Percent	14	
Aluminum	6010A	10.21.97	10.21.97	1	mg/kg	10000	
Antimony	6010A	10.21.97	10.21.97	1	mg/kg	5.8	U
Arsenic	7060A	10.21.97	10.22.97	1	mg/kg	3.5	
Barium	6010A	10.21.97	10.21.97	1	mg/kg	130	
Beryllium	6010A	10.21.97	10.21.97	1	mg/kg	0.67	
Cadmium	6010A	10.21.97	10.21.97	1	mg/kg	0.58	U
Calcium	6010A	10.21.97	10.21.97	1	mg/kg	6900	
Chromium	6010A	10.21.97	10.21.97	1	mg/kg	14	
Cobalt	6010A	10.21.97	10.21.97	1	mg/kg	5.8	
Copper	6010A	10.21.97	10.21.97	1	mg/kg	23	
Iron	6010A	10.21.97	10.21.97	5	mg/kg	16000	
Lead	7421	10.21.97	10.21.97	1	mg/kg	3.5	
Magnesium	6010A	10.21.97	10.21.97	1	mg/kg	5600	
Manganese	6010A	10.21.97	10.21.97	1	mg/kg	240	
Mercury	7471A	10.22.97	10.23.97	1	mg/kg	0.093	U
Molybdenum	6010A	10.21.97	10.21.97	1	mg/kg	2.3	U
Nickel	6010A	10.21.97	10.21.97	1	mg/kg	11.0	
Potassium	6010A	10.21.97	10.21.97	1	mg/kg	2900	
Selenium	7740	10.21.97	10.21.97	1	mg/kg	0.58	U
Silver	6010A	10.21.97	10.21.97	1	mg/kg	1.2	U
Sodium	6010A	10.21.97	10.21.97	1	mg/kg	400	

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SAMPLE NO: 9710387\*10

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P.O.#: 260411  
Req#: D0#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*10 18609-628 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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Following results reported on the basis of 14.0% moisture)

Vanadium	q, q	6010A	10.21.97	10.21.97	1	mg/kg	5.8 U
Vanadium		6010A	10.21.97	10.21.97	1	mg/kg	36
Vanadium		6010A	10.21.97	10.21.97	1	mg/kg	56
Digestion		3050	10.21.97	10.21.97	1	Date	10/21/97
Mercuric Digestion		3050	10.21.97	10.21.97	1	Date	10/21/97

SAMPLE NO: 9710387\*22

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P.O.#: 260411  
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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*22      18609-629      10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1,2,2-Tetrachloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1,2-Trichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1-Dichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1-Dichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
1,2-Dichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,2-Dichloropropane	8260A		10.23.97	1	ug/kg	5.8	U
2-Chloroethylvinylether	8260A		10.23.97	1	ug/kg	58	U
2-Hexanone	8260A		10.23.97	1	ug/kg	58	U
Acetone	8260A		10.23.97	1	ug/kg	58	U
Bromodichloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Bromomethane	8260A		10.23.97	1	ug/kg	5.8	U
Benzene	8260A		10.23.97	1	ug/kg	5.8	U
Bromoform	8260A		10.23.97	1	ug/kg	5.8	U
Chlorobenzene	8260A		10.23.97	1	ug/kg	5.8	U
Carbon Tetrachloride	8260A		10.23.97	1	ug/kg	5.8	U
Chloroethane	8260A		10.23.97	1	ug/kg	5.8	U
Chloroform	8260A		10.23.97	1	ug/kg	5.8	U
Chloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Carbon Disulfide	8260A		10.23.97	1	ug/kg	5.8	U
Dibromochloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Ethylbenzene	8260A		10.23.97	1	ug/kg	5.8	U
Methyl ethyl ketone	8260A		10.23.97	1	ug/kg	58	U
Methyl isobutyl ketone	8260A		10.23.97	1	ug/kg	58	U

SAMPLE NO: 9710387\*22

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P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*22 18609-629 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

## Volatiles

Methyl-tert-butylether	8260A	10.23.97	1	ug/kg	12	U
Methylene chloride	8260A	10.23.97	1	ug/kg	5.8	U
Styrene	8260A	10.23.97	1	ug/kg	5.8	U
Trichloroethene	8260A	10.23.97	1	ug/kg	5.8	U
Toluene	8260A	10.23.97	1	ug/kg	5.8	U
Tetrachloroethene	8260A	10.23.97	1	ug/kg	5.8	U
Vinyl acetate	8260A	10.23.97	1	ug/kg	12	U
Vinyl chloride	8260A	10.23.97	1	ug/kg	5.8	U
Total Xylene Isomers	8260A	10.23.97	1	ug/kg	17	U
cis-1,2-Dichloroethene	8260A	10.23.97	1	ug/kg	5.8	U
cis-1,3-Dichloropropene	8260A	10.23.97	1	ug/kg	5.8	U
trans-1,2-Dichloroethene	8260A	10.23.97	1	ug/kg	5.8	U
trans-1,3-Dichloropropene	8260A	10.23.97	1	ug/kg	5.8	U
Surrogates **						
1,2-Dichloroethane-d4 Rep.	8260A	10.23.97	1	Percent	83	
4-Bromofluorobenzene Rep.	8260A	10.23.97	1	Percent	101	
Toluene-d8 Reported	8260A	10.23.97	1	Percent	99	
Dibromofluoromethane Rep.	8260A	10.23.97	1	Percent	92	

SAMPLE NO: 9710387\*11

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 Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 11

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387*11	18609-630	10.16.97
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

Mod 8015 - Gas

TPH (Gasoline Range)	8015M		10.22.97	1	mg/kg	12	U
rogates **							
a,a,a-Trifluorotoluene Rep.	8015M		10.22.97	1	Percent	105	

000143

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DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 10

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*11      18609-630      10.16.97  
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-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

JP-5

TPH (Diesel Range)	8015M	10.21.97	10.23.97	1	mg/kg	12	U
JP-5	8015M	10.21.97	10.23.97	1	mg/kg	12	U
Surrogates, **							
Naphthalene Reported	8015M	10.21.97	10.23.97	1	Percent	83	
o-Terphenyl Reported	8015M	10.21.97	10.23.97	1	Percent	100	

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 12

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*11 18609-630 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1,2,2-Tetrachloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1,2-Trichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1-Dichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,1-Dichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
1,2-Dichloroethane	8260A		10.23.97	1	ug/kg	5.8	U
1,2-Dichloropropane	8260A		10.23.97	1	ug/kg	5.8	U
2-Chloroethylvinylether	8260A		10.23.97	1	ug/kg	58	U
2-Hexanone	8260A		10.23.97	1	ug/kg	58	U
Acetone	8260A		10.23.97	1	ug/kg	58	U
Bromodichloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Bromomethane	8260A		10.23.97	1	ug/kg	5.8	U
Benzene	8260A		10.23.97	1	ug/kg	5.8	U
Bromoform	8260A		10.23.97	1	ug/kg	5.8	U
Chlorobenzene	8260A		10.23.97	1	ug/kg	5.8	U
Carbon Tetrachloride	8260A		10.23.97	1	ug/kg	5.8	U
Chloroethane	8260A		10.23.97	1	ug/kg	5.8	U
Chloroform	8260A		10.23.97	1	ug/kg	5.8	U
Chloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Carbon Disulfide	8260A		10.23.97	1	ug/kg	5.8	U
Dibromochloromethane	8260A		10.23.97	1	ug/kg	5.8	U
Ethylbenzene	8260A		10.23.97	1	ug/kg	5.8	U
Methyl ethyl ketone	8260A		10.23.97	1	ug/kg	58	U
Methyl isobutyl ketone	8260A		10.23.97	1	ug/kg	58	U

SAMPLE NO: 9710387\*11

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 13

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*11 18609-630 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Volatiles

Methyl-tert-butylether <sup>11</sup>	8260A		10.23.97	1	ug/kg	12	U
Methylene chloride <sup>11</sup>	8260A		10.23.97	1	ug/kg	5.8	U
Styrene	8260A		10.23.97	1	ug/kg	5.8	U
Trichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
Toluene	8260A		10.23.97	1	ug/kg	5.8	U
Tetrachloroethene	8260A		10.23.97	1	ug/kg	5.8	U
Vinyl acetate	8260A		10.23.97	1	ug/kg	12	U
Vinyl chloride	8260A		10.23.97	1	ug/kg	5.8	U
Total Xylene Isomers	8260A		10.23.97	1	ug/kg	17	U
cis-1,2-Dichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
cis-1,3-Dichloropropene	8260A		10.23.97	1	ug/kg	5.8	U
trans-1,2-Dichloroethene	8260A		10.23.97	1	ug/kg	5.8	U
trans-1,3-Dichloropropene	8260A		10.23.97	1	ug/kg	5.8	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.23.97	1	Percent	87	
4-Bromofluorobenzene Rep.	8260A		10.23.97	1	Percent	101	
Toluene-d8 Reported	8260A		10.23.97	1	Percent	92	
Dibromofluoromethane Rep.	8260A		10.23.97	1	Percent	96	

SAMPLE NO: 9710387\*11

Received: 10.17.97  
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Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 4

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*11 18609-630 10.16.97  
-----PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG  
-----

(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

1,2,4-Trichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
1,2-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
1,4-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4,5-Trichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4,6-Trichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4-Dichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4-Dimethylphenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,4-Dinitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	970	U
2,4-Dinitrotoluene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2,6-Dinitrotoluene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Chloronaphthalene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Chlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Methyl-4,6-dinitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	970	U
2-Methylnaphthalene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Methylphenol (o-Cresol)	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
2-Nitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
3,3'-Dichlorobenzidine	8270B	10.21.97	10.23.97	1	ug/kg	380	U
3-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Bromophenylphenylether	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Chloro-3-methylphenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Chloroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Chlorophenylphenylether	8270B	10.21.97	10.23.97	1	ug/kg	380	U

SAMPLE NO: 9710387\*11

Received: 10.17.97  
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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 5

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710387\*11 18609-630 10.16.97  
-----PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG  
-----

(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

4-Methylphenol (p-Cresol)	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	380	U
4-Nitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	970	U
Acenaphthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Acenaphthylene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Anthracene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(a)anthracene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(b)fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(g,h,i)perylene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Benzo(k)fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Butylbenzylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Chrysene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Di-n-octylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Dibenzofuran	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Dibutylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	280	J
Diethylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Dimethylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Fluorene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachlorobutadiene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachlorocyclopentadiene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Hexachloroethane	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Indeno(1,2,3-c,d)pyrene	8270B	10.21.97	10.23.97	1	ug/kg	380	U

SAMPLE NO: 9710387\*11

Received: 10.17.97

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P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 6

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*11 18609-630 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

N-Nitrosodiphenylamine	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Toluene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Phthalene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Phenanthrene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Phenol	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Pentachlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	770	U
Pyrene	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Bis(2-chloroethoxy)methane	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Bis(2-chloroisopropyl)ether	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Bis(2-ethylhexyl)phthalate	8270B	10.21.97	10.23.97	1	ug/kg	380	U
Surrogates **							
2-Fluorobiphenyl Reported	8270B	10.21.97	10.23.97	1	Percent	99	
2-Fluorophenol Reported	8270B	10.21.97	10.23.97	1	Percent	79	
2,4,6-Tribromophenol Rep.	8270B	10.21.97	10.23.97	1	Percent	98	
Nitrobenzene-d5 Reported	8270B	10.21.97	10.23.97	1	Percent	85	
Phenol-d5 Reported	8270B	10.21.97	10.23.97	1	Percent	92	
Terphenyl-d14 Reported	8270B	10.21.97	10.23.97	1	Percent	77	

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*11 18609-630 10.16.97  
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PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG  
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(Following results reported on the basis of 14.0% moisture)

## Compounds by SIM

Benzo(a)pyrene	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
Dibenzo(a,h)anthracene	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
N-Nitrosodi-n-propylamine	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
Bis(2-chloroethyl)ether	8270.S	10.21.97	10.25.97	1	ug/kg	38	U
Surrogates **							
2-Fluorobiphenyl Reported	8270.S	10.21.97	10.25.97	1	Percent	52	
Terphenyl-d14 Reported	8270.S	10.21.97	10.25.97	1	Percent	58	

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SAMPLE NO: 9710387\*11

Received: 10.17.97

Mailed : 11.04.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 7

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*11 18609-630 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

## Pesticides

Aldrin	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
γ'-DDD	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
γ'-DDE	8081	10.20.97	10.24.97	1	ug/kg	0.62	J
p,p'-DDT	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Dieldrin	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Endosulfan I	8081	10.20.97	10.24.97	1	ug/kg	0.81	U
Endosulfan II	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Endosulfan sulfate	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Endrin	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Endrin aldehyde	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Heptachlor epoxide	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Heptachlor	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
Methoxychlor	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
BHC, alpha isomer	8081	10.20.97	10.24.97	1	ug/kg	0.81	U
alpha-Chlordane	8081	10.20.97	10.24.97	1	ug/kg	5.2	
BHC, beta isomer	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
BHC, delta isomer	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
BHC, gamma isomer (Lindane)	8081	10.20.97	10.24.97	1	ug/kg	2.3	U
gamma-Chlordane	8081	10.20.97	10.24.97	1	ug/kg	5.5	
Surrogates **							
Decachlorobiphenyl Reported	8081	10.20.97	10.24.97	1	Percent	117	
Tetrachloro-meta-xylene Rpt	8081	10.20.97	10.24.97	1	Percent	84	

SAMPLE NO: 9710387\*11

Received: 10.17.97

Mailed : 11.04.97

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Irvine, CA 92614

P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 8

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE		DATE SAMPLED					
9710387*11	18609-630	10.16.97					
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
(Following results reported on the basis of 14.0% moisture)							
Pesticides Confirmation							
Aldrin		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
p,p'-DDD	jit	8081	10.20.97	10.24.97	1	ug/kg	2.3 U
p,p'-DDE	6M	8081	10.20.97	10.24.97	1	ug/kg	0.76 J
p,p'-DDT		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Dieldrin		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Endosulfan I		8081	10.20.97	10.24.97	1	ug/kg	0.81 U
Endosulfan II		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Endosulfan sulfate		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Endrin		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Endrin aldehyde		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Heptachlor epoxide		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Heptachlor		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
Methoxychlor		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
BHC, alpha isomer		8081	10.20.97	10.24.97	1	ug/kg	0.81 U
alpha-Chlordane		8081	10.20.97	10.24.97	1	ug/kg	4.8
BHC, beta isomer		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
BHC, delta isomer		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
BHC, gamma isomer (Lindane)		8081	10.20.97	10.24.97	1	ug/kg	2.3 U
gamma-Chlordane		8081	10.20.97	10.24.97	1	ug/kg	6.3
Surrogates **							
Decachlorobiphenyl Reported		8081	10.20.97	10.24.97	1	Percent	103
Tetrachloro-meta-xylene Rpt		8081	10.20.97	10.24.97	1	Percent	79

SAMPLE NO: 9710387\*11

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P.O.#: 260411  
 Req#: DO#0070  
 Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 9

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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 9710387\*11      18609-630      10.16.97  
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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-----  
 (Following results reported on the basis of 14.0% moisture)  
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## Polychlorinated Biphenyls

Aroclor 1016	8081	10.20.97	10.24.97	1	ug/kg	38	U
Aroclor 1221	8081	10.20.97	10.24.97	1	ug/kg	38	U
Aroclor 1232	8081	10.20.97	10.24.97	1	ug/kg	38	U
Aroclor 1242	8081	10.20.97	10.24.97	1	ug/kg	38	U
Aroclor 1248	8081	10.20.97	10.24.97	1	ug/kg	38	U
Aroclor 1254	8081	10.20.97	10.24.97	1	ug/kg	38	U
Aroclor 1260	8081	10.20.97	10.24.97	1	ug/kg	38	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.20.97	10.24.97	1	Percent	117	
Tetrachloro-meta-xylene Rpt	8081	10.20.97	10.24.97	1	Percent	84	

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## ANALYTICAL REPORT

SAMPLE NO: 9710387\*11

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 1

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*11 18609-630 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
Total Cyanide	9010A	10.23.97	10.23.97	1	mg/kg	0.58	U
PH	9045		10.21.97	1	Units	8.5	
Moisture/TNFR	D2216		10.23.97	1	Percent	14	
Aluminum	6010A	10.21.97	10.21.97	1	mg/kg	10000	
Antimony	6010A	10.21.97	10.21.97	1	mg/kg	5.8	U
Arsenic	7060A	10.21.97	10.22.97	1	mg/kg	3.1	
Barium	6010A	10.21.97	10.21.97	1	mg/kg	120	
Beryllium	6010A	10.21.97	10.21.97	1	mg/kg	0.60	
Cadmium	6010A	10.21.97	10.21.97	1	mg/kg	0.58	U
Calcium	6010A	10.21.97	10.21.97	1	mg/kg	5500	
Chromium	6010A	10.21.97	10.21.97	1	mg/kg	13	
Cobalt	6010A	10.21.97	10.21.97	1	mg/kg	5.7	
Copper	6010A	10.21.97	10.21.97	1	mg/kg	14	
Iron	6010A	10.21.97	10.21.97	5	mg/kg	16000	
Lead	7421	10.21.97	10.21.97	1	mg/kg	4.7	
Magnesium	6010A	10.21.97	10.21.97	1	mg/kg	5700	
Manganese	6010A	10.21.97	10.21.97	1	mg/kg	230	
Mercury	7471A	10.22.97	10.23.97	1	mg/kg	0.093	U
Molybdenum	6010A	10.21.97	10.21.97	1	mg/kg	2.3	U
Nickel	6010A	10.21.97	10.21.97	1	mg/kg	12	
Potassium	6010A	10.21.97	10.21.97	1	mg/kg	2900	
Selenium	7740	10.21.97	10.21.97	1	mg/kg	0.58	U
Silver	6010A	10.21.97	10.21.97	1	mg/kg	1.2	U
Zinc	6010A	10.21.97	10.21.97	1	mg/kg	240	

SAMPLE NO: 9710387\*11

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P.O.#: 260411  
 Req#: D0#0070  
 Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
 9710387\*11      18609-630      10.16.97  
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

Thallium	6010A	10.21.97	10.21.97	1	mg/kg	5.8	U
Barium	6010A	10.21.97	10.21.97	1	mg/kg	35	
Lead	6010A	10.21.97	10.21.97	1	mg/kg	49	
Digestion	3050	10.21.97	10.21.97	1	Date	10/21/97	
Furnace Digestion	3050	10.21.97	10.21.97	1	Date	10/21/97	

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SAMPLE NO: 9710387\*23

Received: 10.17.97

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*23      18609-631      10.16.97

PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG

(Following results reported on the basis of 12.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,1,2,2-Tetrachloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,1,2-Trichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,1-Dichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,1-Dichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
1,2-Dichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,2-Dichloropropane	8260A		10.24.97	1	ug/kg	5.7	U
2-Chloroethylvinylether	8260A		10.24.97	1	ug/kg	57	U
2-Hexanone	8260A		10.24.97	1	ug/kg	57	U
Acetone	8260A		10.24.97	1	ug/kg	57	U
Bromodichloromethane	8260A		10.24.97	1	ug/kg	5.7	U
Bromomethane	8260A		10.24.97	1	ug/kg	5.7	U
Benzene	8260A		10.24.97	1	ug/kg	5.7	U
Bromoform	8260A		10.24.97	1	ug/kg	5.7	U
Chlorobenzene	8260A		10.24.97	1	ug/kg	5.7	U
Carbon Tetrachloride	8260A		10.24.97	1	ug/kg	5.7	U
Chloroethane	8260A		10.24.97	1	ug/kg	5.7	U
Chloroform	8260A		10.24.97	1	ug/kg	5.7	U
Chloromethane	8260A		10.24.97	1	ug/kg	5.7	U
Carbon Disulfide	8260A		10.24.97	1	ug/kg	5.7	U
Dibromochloromethane	8260A		10.24.97	1	ug/kg	5.7	U
Ethylbenzene	8260A		10.24.97	1	ug/kg	5.7	U
Methyl ethyl ketone	8260A		10.24.97	1	ug/kg	57	U
Methyl isobutyl ketone	8260A		10.24.97	1	ug/kg	57	U

SAMPLE NO: 9710387\*23

Received: 10.17.97

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OHM Remediation Services Corp.  
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P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*23 18609-631 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 12.0% moisture)

## Volatiles

Methyl-tert-butylether	8260A		10.24.97	1	ug/kg	11	U
ethylene chloride	8260A		10.24.97	1	ug/kg	5.7	U
benzene	8260A		10.24.97	1	ug/kg	5.7	U
Trichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
Toluene	8260A		10.24.97	1	ug/kg	5.7	U
Tetrachloroethene	8260A		10.24.97	1	ug/kg	5.7	U
Vinyl acetate	8260A		10.24.97	1	ug/kg	11	U
Vinyl chloride	8260A		10.24.97	1	ug/kg	5.7	U
Total Xylene Isomers	8260A		10.24.97	1	ug/kg	17	U
cis-1,2-Dichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
cis-1,3-Dichloropropene	8260A		10.24.97	1	ug/kg	5.7	U
trans-1,2-Dichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
trans-1,3-Dichloropropene	8260A		10.24.97	1	ug/kg	5.7	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.24.97	1	Percent	80	
4-Bromofluorobenzene Rep.	8260A		10.24.97	1	Percent	103	
Toluene-d8 Reported	8260A		10.24.97	1	Percent	99	
Dibromofluoromethane Rep.	8260A		10.24.97	1	Percent	89	

SAMPLE NO: 9710387\*12

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 Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 11

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*12 18609-632 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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Following results reported on the basis of 15.0% moisture)

od 8015 - Gas

TPH (Gasoline Range)	8015M		10.22.97	1	mg/kg	12	U
Surrogates **	8015M		10.22.97	1	Percent	100	

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 10

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
 9710387\*12      18609-632      10.16.97  
 -----

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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-----  
 (Following results reported on the basis of 15.0% moisture)  
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JP-5

TPH (Diesel Range)	8015M	10.21.97	10.23.97	1	mg/kg	12	U
JP-5	8015M	10.21.97	10.23.97	1	mg/kg	12	U
Propagates **							
Naphthalene Reported	8015M	10.21.97	10.23.97	1	Percent	80	
o-Terphenyl Reported	8015M	10.21.97	10.23.97	1	Percent	94	

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 12

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710387\*12      18609-632      10.16.97  
-----

PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
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(Following results reported on the basis of 15.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.23.97	1	ug/kg	5.9	U
1,1,2,2-Tetrachloroethane	8260A		10.23.97	1	ug/kg	5.9	U
1,1,2-Trichloroethane	8260A		10.23.97	1	ug/kg	5.9	U
1,1-Dichloroethane	8260A		10.23.97	1	ug/kg	5.9	U
1,1-Dichloroethene	8260A		10.23.97	1	ug/kg	5.9	U
1,2-Dichloroethane	8260A		10.23.97	1	ug/kg	5.9	U
1,2-Dichloropropane	8260A		10.23.97	1	ug/kg	5.9	U
2-Chloroethylvinylether	8260A		10.23.97	1	ug/kg	59	U
2-Hexanone	8260A		10.23.97	1	ug/kg	59	U
Acetone	8260A		10.23.97	1	ug/kg	59	U
Bromodichloromethane	8260A		10.23.97	1	ug/kg	5.9	U
Bromomethane	8260A		10.23.97	1	ug/kg	5.9	U
Benzene	8260A		10.23.97	1	ug/kg	5.9	U
Bromoform	8260A		10.23.97	1	ug/kg	5.9	U
Chlorobenzene	8260A		10.23.97	1	ug/kg	5.9	U
Carbon Tetrachloride	8260A		10.23.97	1	ug/kg	5.9	U
Chloroethane	8260A		10.23.97	1	ug/kg	5.9	U
Chloroform	8260A		10.23.97	1	ug/kg	5.9	U
Chloromethane	8260A		10.23.97	1	ug/kg	5.9	U
Carbon Disulfide	8260A		10.23.97	1	ug/kg	5.9	U
Dibromochloromethane	8260A		10.23.97	1	ug/kg	5.9	U
Ethylbenzene	8260A		10.23.97	1	ug/kg	5.9	U
Methyl ethyl ketone	8260A		10.23.97	1	ug/kg	59	U
Methyl isobutyl ketone	8260A		10.23.97	1	ug/kg	59	U

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 13

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*12 18609-632 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 15.0% moisture)

## Volatiles

Methyl-tert-butylether	8260A	10.23.97	1	ug/kg	12	U
ethylene chloride	8260A	10.23.97	1	ug/kg	5.9	U
xylene	8260A	10.23.97	1	ug/kg	5.9	U
Trichloroethene	8260A	10.23.97	1	ug/kg	5.9	U
Toluene	8260A	10.23.97	1	ug/kg	5.9	U
Tetrachloroethene	8260A	10.23.97	1	ug/kg	5.9	U
Vinyl acetate	8260A	10.23.97	1	ug/kg	12	U
Vinyl chloride	8260A	10.23.97	1	ug/kg	5.9	U
Total Xylene Isomers	8260A	10.23.97	1	ug/kg	18	U
cis-1,2-Dichloroethene	8260A	10.23.97	1	ug/kg	5.9	U
cis-1,3-Dichloropropene	8260A	10.23.97	1	ug/kg	5.9	U
trans-1,2-Dichloroethene	8260A	10.23.97	1	ug/kg	5.9	U
trans-1,3-Dichloropropene	8260A	10.23.97	1	ug/kg	5.9	U
Surrogates **						
1,2-Dichloroethane-d4 Rep.	8260A	10.23.97	1	Percent	88	
4-Bromofluorobenzene Rep.	8260A	10.23.97	1	Percent	101	
Toluene-d8 Reported	8260A	10.23.97	1	Percent	92	
Dibromofluoromethane Rep.	8260A	10.23.97	1	Percent	103	

SAMPLE NO: 9710387\*12

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 4

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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9710387\*12      18609-632      10.16.97  
-----

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 15.0% moisture)

## Semi-volatiles

1,2,4-Trichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
1,2-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
1,3-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
1,4-Dichlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2,4,5-Trichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2,4,6-Trichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2,4-Dichlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2,4-Dimethylphenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2,4-Dinitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	980	U
2,4-Dinitrotoluene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2,6-Dinitrotoluene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2-Chloronaphthalene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2-Chlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2-Methyl-4,6-dinitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	980	U
2-Methylnaphthalene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2-Methylphenol (o-Cresol)	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	390	U
2-Nitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
3,3'-Dichlorobenzidine	8270B	10.21.97	10.23.97	1	ug/kg	390	U
3-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	390	U
4-Bromophenylphenylether	8270B	10.21.97	10.23.97	1	ug/kg	390	U
4-Chloro-3-methylphenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
4-Chloroaniline	8270B	10.21.97	10.23.97	1	ug/kg	390	U
4-Chlorophenylphenylether	8270B	10.21.97	10.23.97	1	ug/kg	390	U

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SAMPLE NO: 9710387\*12

Received: 10.17.97

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Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 5

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*12 18609-632 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 15.0% moisture)

## Semi-volatiles

4-Methylphenol (p-Cresol)	8270B	10.21.97	10.23.97	1	ug/kg	390	U
4-Nitroaniline	8270B	10.21.97	10.23.97	1	ug/kg	390	U
4-Nitrophenol	8270B	10.21.97	10.23.97	1	ug/kg	980	U
Acenaphthene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Acenaphthylene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Anthracene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Benzo(a)anthracene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Benzo(b)fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Benzo(g,h,i)perylene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Benzo(k)fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Butylbenzylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Chrysene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Di-n-octylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Dibenzofuran	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Dibutylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	260	J
Diethylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Dimethylphthalate	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Fluoranthene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Fluorene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Hexachlorobenzene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Hexachlorobutadiene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Hexachlorocyclopentadiene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Hexachloroethane	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Indeno(1,2,3-c,d)pyrene	8270B	10.21.97	10.23.97	1	ug/kg	390	U

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P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 6

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710387\*12      18609-632      10.16.97  
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 15.0% moisture)

## Semi-volatiles

N-Nitrosodiphenylamine	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Nitrobenzene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Naphthalene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Phenanthrene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Phenol	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Pentachlorophenol	8270B	10.21.97	10.23.97	1	ug/kg	780	U
Pyrene	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Bis(2-chloroethoxy)methane	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Bis(2-chloroisopropyl)ether	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Bis(2-ethylhexyl)phthalate	8270B	10.21.97	10.23.97	1	ug/kg	390	U
Surrogates **							
2-Fluorobiphenyl Reported	8270B	10.21.97	10.23.97	1	Percent	92	
2-Fluorophenol Reported	8270B	10.21.97	10.23.97	1	Percent	74	
2,4,6-Tribromophenol Rep.	8270B	10.21.97	10.23.97	1	Percent	92	
Nitrobenzene-d5 Reported	8270B	10.21.97	10.23.97	1	Percent	79	
Phenol-d5 Reported	8270B	10.21.97	10.23.97	1	Percent	87	
Terphenyl-d14 Reported	8270B	10.21.97	10.23.97	1	Percent	72	

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 Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

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 9710387\*12      18609-632      10.16.97  
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PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 15.0% moisture)

## Compounds by SIM

Benzo(a)pyrene	8270.S	10.21.97	10.25.97	1	ug/kg	39	U
benzo(a,h)anthracene	8270.S	10.21.97	10.25.97	1	ug/kg	39	U
Nitrosodi-n-propylamine	8270.S	10.21.97	10.25.97	1	ug/kg	39	U
Bis(2-chloroethyl)ether	8270.S	10.21.97	10.25.97	1	ug/kg	39	U
Surrogates **							
2-Fluorobiphenyl Reported	8270.S	10.21.97	10.25.97	1	Percent	49	
Terphenyl-d14 Reported	8270.S	10.21.97	10.25.97	1	Percent	62	

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 7

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*12 18609-632 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 15.0% moisture)

## Pesticides

Aldrin	8081	10.20.97	10.24.97	10	ug/kg	15	J
p,p'-DDD	8081	10.20.97	10.24.97	10	ug/kg	24	U
p,p'-DDE	8081	10.20.97	10.24.97	10	ug/kg	7.9	J
p,p'-DDT	8081	10.20.97	10.24.97	10	ug/kg	24	U
Dieldrin	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endosulfan I	8081	10.20.97	10.24.97	10	ug/kg	8.2	U
Endosulfan II	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endosulfan sulfate	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endrin	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endrin aldehyde	8081	10.20.97	10.24.97	10	ug/kg	24	U
Heptachlor epoxide	8081	10.20.97	10.24.97	10	ug/kg	24	U
Heptachlor	8081	10.20.97	10.24.97	10	ug/kg	49	
Methoxychlor	8081	10.20.97	10.24.97	10	ug/kg	24	U
BHC, alpha isomer	8081	10.20.97	10.24.97	10	ug/kg	8.2	U
alpha-Chlordane	8081	10.20.97	10.24.97	10	ug/kg	140	
BHC, beta isomer	8081	10.20.97	10.24.97	10	ug/kg	24	U
BHC, delta isomer	8081	10.20.97	10.24.97	10	ug/kg	24	U
BHC, gamma isomer (Lindane)	8081	10.20.97	10.24.97	10	ug/kg	24	U
gamma-Chlordane	8081	10.20.97	10.24.97	10	ug/kg	140	
Surrogates **							
Decachlorobiphenyl Reported	8081	10.20.97	10.24.97	10	Percent	102	
Tetrachloro-meta-xylene Rpt	8081	10.20.97	10.24.97	10	Percent	84	

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Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 8

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*12 18609-632 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 15.0% moisture)

## Pesticides Confirmation

Aldrin	8081	10.20.97	10.24.97	10	ug/kg	12	J
p'-DDD	8081	10.20.97	10.24.97	10	ug/kg	24	U
p'-DDE	8081	10.20.97	10.24.97	10	ug/kg	10.0	J
p,p'-DDT	8081	10.20.97	10.24.97	10	ug/kg	24	U
Dieldrin	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endosulfan I	8081	10.20.97	10.24.97	10	ug/kg	8.2	U
Endosulfan II	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endosulfan sulfate	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endrin	8081	10.20.97	10.24.97	10	ug/kg	24	U
Endrin aldehyde	8081	10.20.97	10.24.97	10	ug/kg	24	U
Heptachlor epoxide	8081	10.20.97	10.24.97	10	ug/kg	24	U
Heptachlor	8081	10.20.97	10.24.97	10	ug/kg	32	
Methoxychlor	8081	10.20.97	10.24.97	10	ug/kg	24	U
BHC, alpha isomer	8081	10.20.97	10.24.97	10	ug/kg	8.2	U
alpha-Chlordane	8081	10.20.97	10.24.97	10	ug/kg	93	
BHC, beta isomer	8081	10.20.97	10.24.97	10	ug/kg	24	U
BHC, delta isomer	8081	10.20.97	10.24.97	10	ug/kg	24	U
BHC, gamma isomer (Lindane)	8081	10.20.97	10.24.97	10	ug/kg	24	U
gamma-Chlordane	8081	10.20.97	10.24.97	10	ug/kg	91	
Surrogates **							
Decachlorobiphenyl Reported	8081	10.20.97	10.24.97	10	Percent	69	
Tetrachloro-meta-xylene Rpt	8081	10.20.97	10.24.97	10	Percent	51	

SAMPLE NO: 9710387\*12

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P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 9

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*12 18609-632 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 15.0% moisture)

## Polychlorinated Biphenyls

Aroclor 1016	8081	10.20.97	10.24.97	10	ug/kg	390	U
Aroclor 1221	8081	10.20.97	10.24.97	10	ug/kg	390	U
Aroclor 1232	8081	10.20.97	10.24.97	10	ug/kg	390	U
Aroclor 1242	8081	10.20.97	10.24.97	10	ug/kg	390	U
Aroclor 1248	8081	10.20.97	10.24.97	10	ug/kg	390	U
Aroclor 1254	8081	10.20.97	10.24.97	10	ug/kg	390	U
Aroclor 1260	8081	10.20.97	10.24.97	10	ug/kg	390	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.20.97	10.24.97	10	Percent	102	
Tetrachloro-meta-xylene Rpt	8081	10.20.97	10.24.97	10	Percent	84	

000153  
ANALYTICAL REPORT

SAMPLE NO: 9710387\*12

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Irvine, CA 92614

P.O.#: 260411  
Req#: D0#0070  
Project: 18609-002

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 1

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710387\*12      18609-632      10.16.97  
-----

PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
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(Following results reported on the basis of 15.0% moisture)

Total Cyanide	9010A	10.23.97	10.23.97	1	mg/kg	0.59	U
pH	9045		10.21.97	1	Units	8.5	
-Moisture/TNFR	D2216		10.23.97	1	Percent	15	
Aluminum	6010A	10.21.97	10.21.97	1	mg/kg	18000	
Antimony	6010A	10.21.97	10.21.97	1	mg/kg	5.9	U
Arsenic	7060A	10.21.97	10.22.97	1	mg/kg	3.1	
Barium	6010A	10.21.97	10.21.97	1	mg/kg	130	
Beryllium	6010A	10.21.97	10.21.97	1	mg/kg	0.76	
Cadmium	6010A	10.21.97	10.21.97	1	mg/kg	0.59	U
Calcium	6010A	10.21.97	10.21.97	1	mg/kg	9400	
Chromium	6010A	10.21.97	10.21.97	1	mg/kg	18	
Cobalt	6010A	10.21.97	10.21.97	1	mg/kg	7.2	
Copper	6010A	10.21.97	10.21.97	1	mg/kg	10.0	
Iron	6010A	10.21.97	10.21.97	5	mg/kg	21000	
Lead	7421	10.21.97	10.21.97	1	mg/kg	3.9	
Magnesium	6010A	10.21.97	10.21.97	1	mg/kg	7500	
Manganese	6010A	10.21.97	10.21.97	1	mg/kg	270	
Mercury	7471A	10.22.97	10.23.97	1	mg/kg	0.094	U
Molybdenum	6010A	10.21.97	10.21.97	1	mg/kg	2.4	U
Nickel	6010A	10.21.97	10.21.97	1	mg/kg	12	
Potassium	6010A	10.21.97	10.21.97	1	mg/kg	3800	
Selenium	7740	10.21.97	10.21.97	1	mg/kg	0.59	U
Silver	6010A	10.21.97	10.21.97	1	mg/kg	1.2	U
Sodium	6010A	10.21.97	10.21.97	1	mg/kg	330	

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P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE	DATE SAMPLED
9710387*12 18609-632	10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 15.0% moisture)

gallium	4.9	6010A	10.21.97	10.21.97	1	mg/kg	5.9 U
vanadium	7.9	6010A	10.21.97	10.21.97	1	mg/kg	48
inc		6010A	10.21.97	10.21.97	1	mg/kg	52
digestion		3050	10.21.97	10.21.97	1	Date	10/21/97
urnace Digestion		3050	10.21.97	10.21.97	1	Date	10/21/97

SAMPLE NO: 9710387\*24

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Ms. Mary Schneider  
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 Irvine, CA 92614

P.O.#: 260411  
 Req#: D0#0070  
 Project: 18609-002

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*24 18609-633 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 13.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,2,2-Tetrachloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,2-Trichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,1-Dichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,1-Dichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
1,2-Dichloroethane	8260A		10.24.97	1	ug/kg	5.7	U
1,2-Dichloropropane	8260A		10.24.97	1	ug/kg	5.7	U
2-Chloroethylvinylether	8260A		10.24.97	1	ug/kg	57	U
2-Hexanone	8260A		10.24.97	1	ug/kg	57	U
Acetone	8260A		10.24.97	1	ug/kg	57	U
Bromodichloromethane	8260A		10.24.97	1	ug/kg	5.7	U
Bromomethane	8260A		10.24.97	1	ug/kg	5.7	U
Benzene	8260A		10.24.97	1	ug/kg	5.7	U
Bromoform	8260A		10.24.97	1	ug/kg	5.7	U
Chlorobenzene	8260A		10.24.97	1	ug/kg	5.7	U
Carbon Tetrachloride	8260A		10.24.97	1	ug/kg	5.7	U
Chloroethane	8260A		10.24.97	1	ug/kg	5.7	U
Chloroform	8260A		10.24.97	1	ug/kg	5.7	U
Chloromethane	8260A		10.24.97	1	ug/kg	5.7	U
Carbon Disulfide	8260A		10.24.97	1	ug/kg	5.7	U
Dibromochloromethane	8260A		10.24.97	1	ug/kg	5.7	U
Ethylbenzene	8260A		10.24.97	1	ug/kg	5.7	U
Methyl ethyl ketone	8260A		10.24.97	1	ug/kg	57	U
Methyl isobutyl ketone	8260A		10.24.97	1	ug/kg	57	U

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710387\*24 18609-633 10.16.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 13.0% moisture)

## Volatiles

Methyl-tert-butylether	8260A		10.24.97	1	ug/kg	11	U
Methylene chloride	8260A		10.24.97	1	ug/kg	5.7	U
Styrene	8260A		10.24.97	1	ug/kg	5.7	U
Trichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
Toluene	8260A		10.24.97	1	ug/kg	5.7	U
Tetrachloroethene	8260A		10.24.97	1	ug/kg	5.7	U
Vinyl acetate	8260A		10.24.97	1	ug/kg	11	U
Vinyl chloride	8260A		10.24.97	1	ug/kg	5.7	U
Total Xylene Isomers	8260A		10.24.97	1	ug/kg	17	U
cis-1,2-Dichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
cis-1,3-Dichloropropene	8260A		10.24.97	1	ug/kg	5.7	U
trans-1,2-Dichloroethene	8260A		10.24.97	1	ug/kg	5.7	U
trans-1,3-Dichloropropene	8260A		10.24.97	1	ug/kg	5.7	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.24.97	1	Percent	78	
4-Bromofluorobenzene Rep.	8260A		10.24.97	1	Percent	100	
Toluene-d8 Reported	8260A		10.24.97	1	Percent	100	
Dibromofluoromethane Rep.	8260A		10.24.97	1	Percent	88	

000206  
ANALYTICAL REPORT

SAMPLE NO: 9710387\*26

Received: 10.17.97  
Mailed : 11.04.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 260411  
Req#: D0#0070  
Project: 18609-002

REPORT OF ANALYTICAL RESULTS

Page 1

SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

9710387\*26      18609-636      10.16.97

PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG

Mod 8015 - Gas

TPH (Gasoline Range) rrogates **	8015M		10.22.97	1	mg/L	0.1	U
a,a-Trifluorotoluene Rep.	8015M		10.22.97	1	Percent	95	

SAMPLE NO: 9710387\*26

Received: 10.17.97

Mailed : 11.04.97

Ms. Mary Schneider  
 OHM Remediation Services Corp.  
 2031 Main Street  
 Irvine, CA 92614

P.O.#: 260411  
 Req#: DO#0070  
 Project: 18609-002

## REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

9710387\*26 18609-636 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
Volatiles							
1,1,1-Trichloroethane	8260A		10.21.97	1	ug/L	5	U
1,1,2,2-Tetrachloroethane	8260A		10.21.97	1	ug/L	5	U
1,1,2-Trichloroethane	8260A		10.21.97	1	ug/L	5	U
1,1-Dichloroethane	8260A		10.21.97	1	ug/L	5	U
1,1-Dichloroethene	8260A		10.21.97	1	ug/L	5	U
1,2-Dichloroethane	8260A		10.21.97	1	ug/L	5	U
1,2-Dichloropropane	8260A		10.21.97	1	ug/L	5	U
2-Chloroethylvinylether	8260A		10.21.97	1	ug/L	50	U
2-Hexanone	8260A		10.21.97	1	ug/L	50	U
Acetone	8260A		10.21.97	1	ug/L	12	J
Bromodichloromethane	8260A		10.21.97	1	ug/L	5	U
Bromomethane	8260A		10.21.97	1	ug/L	5	U
Benzene	8260A		10.21.97	1	ug/L	5	U
Bromoform	8260A		10.21.97	1	ug/L	5	U
Chlorobenzene	8260A		10.21.97	1	ug/L	5	U
Carbon Tetrachloride	8260A		10.21.97	1	ug/L	5	U
Chloroethane	8260A		10.21.97	1	ug/L	5	U
Chloroform	8260A		10.21.97	1	ug/L	5	U
Chloromethane	8260A		10.21.97	1	ug/L	5	U
Carbon Disulfide	8260A		10.21.97	1	ug/L	5	U
Dibromochloromethane	8260A		10.21.97	1	ug/L	5	U
Ethylbenzene	8260A		10.21.97	1	ug/L	0.63	J
Methyl ethyl ketone	8260A		10.21.97	1	ug/L	50	U
Methyl isobutyl ketone	8260A		10.21.97	1	ug/L	50	U
Methyl-tert-butylether	8260A		10.21.97	1	ug/L	10	U
Methylene chloride	8260A		10.21.97	1	ug/L	5	U

SAMPLE NO: 9710387\*26

Received: 10.17.97

Mailed : 11.04.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 260411  
Req#: DO#0070  
Project: 18609-002

## REPORT OF ANALYTICAL RESULTS

Page 3

## SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

9710387\*26 18609-636 10.16.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
Volatiles							
Styrene	8260A		10.21.97	1	ug/L	5	U
Trichloroethene	8260A		10.21.97	1	ug/L	5	U
Toluene	8260A		10.21.97	1	ug/L	5	U
Trichloroethene	8260A		10.21.97	1	ug/L	5	U
Ethyl acetate	8260A		10.21.97	1	ug/L	50	U
Vinyl chloride	8260A		10.21.97	1	ug/L	5	U
Total Xylene Isomers	8260A		10.21.97	1	ug/L	15	U
cis-1,2-Dichloroethene	8260A		10.21.97	1	ug/L	5	U
cis-1,3-Dichloropropene	8260A		10.21.97	1	ug/L	5	U
trans-1,2-Dichloroethene	8260A		10.21.97	1	ug/L	5	U
trans-1,3-Dichloropropene	8260A		10.21.97	1	ug/L	5	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.21.97	1	Percent	96	
4-Bromofluorobenzene Rep.	8260A		10.21.97	1	Percent	91	
Toluene-d8 Reported	8260A		10.21.97	1	Percent	90	
Dibromofluoromethane Rep.	8260A		10.21.97	1	Percent	85	



**OHM Remediation Services Corp**  
 Subsidiary of OHM Corporation  
 U.S. Route 224 East • Findlay, Ohio 45840 • (419) 423-3526

**CHAIN-OF-CUSTODY RECORD**

PROJECT DATA MANAGER'S COPY

**212069**

FORM 0019 REV. 2-97

OHM's LAB COORDINATOR <b>DWAYNE Isthida</b>	LAB COORDINATOR'S PHONE <b>(714) 263-1146</b>	LAB COORDINATOR'S FAX <b>(714) 263-1147</b>	LABORATORY SERVICE ID	LABORATORY CONTACT	MAIL REPORT (COMPANY NAME)
PROJECT NAME <b>TAA 314</b>	PROJECT LOCATION <b>EL TORO MCAS</b>	PROJECT NUMBER <b>18009</b>	LABORATORY PHONE	LABORATORY FAX	RECIPIENT NAME
PROJECT CONTACT <b>D. Isthida</b>	PROJECT PHONE NUMBER <b>263-1146</b>	PROJECT FAX <b>263-1147</b>	LABORATORY ADDRESS		ADDRESS
PROJECT ADDRESS <b>2031 MAIN ST.</b>	CITY, STATE AND ZIP CODE <b>IRVINE, CA.</b>	CLIENT <b>SWDIY</b>	CITY, STATE AND ZIP CODE		CITY, STATE AND ZIP CODE
PROJECT MANAGER <b>Bill SEDLAK</b>	PROJECT MANAGER'S PHONE <b>263-1146</b>	PROJECT MANAGER'S FAX <b>263-1147</b>			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses										Voc Comments
									TPH-LEACHABLE	TPH-EXTRACTABLE	PAH-SVOC-SSPTO	VOC-68/69	Metals-1001/70MS	TOTAL CHLORIDE-9010	PH-9045	REST PCBs-8081			
1	18009-704	S	10/20/97	1404	-	1	C	5 DAY	X	X	X	X	X	X	X	X	X		
2	18009-705	S	10/20/97	1413	-	1			X	X	X	X	X	X	X	X	X		
3	18009-706	S	10/20/97	1420	-	1					X								
4	18009-707	W	10/20/97	0700 HCL		2			X		X								
5	18009-708	W	10/20/97	445 HCL HNO3		10	C	5 DAY	X	X	X	X	X	X	X	X	X		
6																			
7																			
8																			
9																			
10																			

SAMPLES COLLECTED BY: <b>(Signature)</b>	COURIER AND AIR BILL NUMBER:	COOLER TEMPERATURE UPON RECEIPT:
RELINQUISHED BY: <b>(Signature)</b>	RECEIVED BY: <b>(Signature)</b>	SAMPLE'S CONDITION UPON RECEIPT:
	DATE: <b>10/21/97</b>	TIME: <b>1435</b>

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Yellow - Project Data Manager

**Project Information Section  
For Project Personnel Only  
Do Not Submit to Laboratory**

Sample Point Location	Sample Type			
	G	C	F	Q
10/21/97 TAA 1. 314SBD-1.5	X			
2. 314SBD-2' (FD)	X			X
3. 314SBD-3'	X			
4. Trip Blank	X			X
5. Rinseate	X			X

Comments

Sample Type: G - Grab, C - Composite, F - Field Sample  
 QC - Quality Control Sample

000108

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 11

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*9      18609-704      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

(Following results reported on the basis of 13.0% moisture)

Mod 8015 - Gas

TPH (Gasoline Range)      8015M      10.24.97    1      mg/kg      11    U  
irrogates \*\*  
a,a,a-Trifluorotoluene Rep.    8015M      10.24.97    1      Percent      104  
-----

000107

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1940171  
Req#: DO#0070  
Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 10

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*9      18609-704      10.20.97  
-----

-----  
PARAMETER                      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 13.0% moisture)

JP-5

TPH (Diesel Range)	8015M	10.24.97	10.27.97	1	mg/kg	11	U
JP-5	8015M	10.24.97	10.27.97	1	mg/kg	11	U
Surrogates **							
Naphthalene Reported	8015M	10.24.97	10.27.97	1	Percent	78	
o-Terphenyl Reported	8015M	10.24.97	10.27.97	1	Percent	96	

-----

000109

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: D0#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 12

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE		DATE SAMPLED					
9710422*9	18609-704	10.20.97					
PARAMETER	METHOD	PREP	ANALYZED	DIL	UNITS	RESULT	FLG
(Following results reported on the basis of 13.0% moisture)							
Volatiles							
1,1,1-Trichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1,2,2-Tetrachloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1,2-Trichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1-Dichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1-Dichloroethene	8260A		10.26.97	1	ug/kg	5.7	U
1,2-Dichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,2-Dichloropropane	8260A		10.26.97	1	ug/kg	5.7	U
2-Chloroethylvinylether	8260A		10.26.97	1	ug/kg	57	U
2-Hexanone	8260A		10.26.97	1	ug/kg	57	U
Acetone	8260A		10.26.97	1	ug/kg	57	U
Bromodichloromethane	8260A		10.26.97	1	ug/kg	5.7	U
Bromomethane	8260A		10.26.97	1	ug/kg	5.7	U
Benzene	8260A		10.26.97	1	ug/kg	5.7	U
Bromoform	8260A		10.26.97	1	ug/kg	5.7	U
Chlorobenzene	8260A		10.26.97	1	ug/kg	5.7	U
Carbon Tetrachloride	8260A		10.26.97	1	ug/kg	5.7	U
Chloroethane	8260A		10.26.97	1	ug/kg	5.7	U
Chloroform	8260A		10.26.97	1	ug/kg	5.7	U
Chloromethane	8260A		10.26.97	1	ug/kg	5.7	U
Carbon Disulfide	8260A		10.26.97	1	ug/kg	5.7	U
Dibromochloromethane	8260A		10.26.97	1	ug/kg	5.7	U
Ethylbenzene	8260A		10.26.97	1	ug/kg	5.7	U
Methyl ethyl ketone	8260A		10.26.97	1	ug/kg	57	U
Methyl isobutyl ketone	8260A		10.26.97	1	ug/kg	57	U

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
 OHM Remediation Services Corp.  
 2031 Main Street  
 Irvine, CA 92614

P.O.#: 1040171  
 Req#: DO#0070  
 Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 13

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
 9710422\*9      18609-704      10.20.97  
 -----

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
-----------	--------	--------	----------	-----	-------	--------	-----

-----  
 (Following results reported on the basis of 13.0% moisture)  
 -----

## Volatiles

Methyl-tert-butylether	8260A		10.26.97	1	ug/kg	11	U
Methylene chloride J2	8260A		10.26.97	1	ug/kg	5.7	U
Styrene	8260A		10.26.97	1	ug/kg	5.7	U
Trichloroethene	8260A		10.26.97	1	ug/kg	5.7	U
Toluene	8260A		10.26.97	1	ug/kg	5.7	U
Tetrachloroethene	8260A		10.26.97	1	ug/kg	5.7	U
Vinyl acetate	8260A		10.26.97	1	ug/kg	11	U
Vinyl chloride	8260A		10.26.97	1	ug/kg	5.7	U
Total Xylene Isomers	8260A		10.26.97	1	ug/kg	17	U
cis-1,2-Dichloroethene	8260A		10.26.97	1	ug/kg	5.7	U
cis-1,3-Dichloropropene	8260A		10.26.97	1	ug/kg	5.7	U
trans-1,2-Dichloroethene	8260A		10.26.97	1	ug/kg	5.7	U
trans-1,3-Dichloropropene	8260A		10.26.97	1	ug/kg	5.7	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.26.97	1	Percent	79	
4-Bromofluorobenzene Rep.	8260A		10.26.97	1	Percent	100	
Toluene-d8 Reported	8260A		10.26.97	1	Percent	98	
Dibromofluoromethane Rep.	8260A		10.26.97	1	Percent	81	

-----

000101

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
 OHM Remediation Services Corp.  
 2031 Main Street  
 Irvine, CA 92614

P.O.#: 1040171  
 Req#: DO#0070  
 Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 4

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE		DATE SAMPLED					
9710422*9	18609-704	10.20.97					
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
(Following results reported on the basis of 13.0% moisture)							
Semi-volatiles							
1,2,4-Trichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
1,2-Dichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
1,3-Dichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
1,4-Dichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4,5-Trichlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4,6-Trichlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4-Dichlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4-Dimethylphenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4-Dinitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	950	U
2,4-Dinitrotoluene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,6-Dinitrotoluene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Chloronaphthalene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Chlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Methyl-4,6-dinitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	950	U
2-Methylnaphthalene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Methylphenol (o-Cresol)	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Nitroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Nitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
3,3'-Dichlorobenzidine	8270B	10.23.97	10.27.97	1	ug/kg	380	U
3-Nitroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Bromophenylphenylether	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Chloro-3-methylphenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Chloroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Chlorophenylphenylether	8270B	10.23.97	10.27.97	1	ug/kg	380	U

00102

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 5

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*9      18609-704      10.20.97  
-----

-----  
PARAMETER                      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

(Following results reported on the basis of 13.0% moisture)

## Semi-volatiles

4-Methylphenol (p-Cresol)	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Nitroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Nitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	950	U
Acenaphthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Acenaphthylene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Anthracene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(a)anthracene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(b)fluoranthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(g,h,i)perylene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(k)fluoranthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Butylbenzylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Chrysene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Di-n-octylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Dibenzofuran	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Dibutylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	210	J
Diethylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Dimethylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Fluoranthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Fluorene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachlorobutadiene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachlorocyclopentadiene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachloroethane	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Indeno(1,2,3-c,d)pyrene	8270B	10.23.97	10.27.97	1	ug/kg	380	U

-----

00103

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 6

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE		DATE SAMPLED						
9710422*9	18609-704	10.20.97						
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG	
(Following results reported on the basis of 13.0% moisture)								
Semi-volatiles								
N-Nitrosodiphenylamine	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Nitrobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Naphthalene	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Phenanthrene	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Phenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Pentachlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	760	U	
Pyrene	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Bis(2-chloroethoxy)methane	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Bis(2-chloroisopropyl)ether	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Bis(2-ethylhexyl)phthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U	
Surrogates **								
2-Fluorobiphenyl Reported	8270B	10.23.97	10.27.97	1	Percent	95		
2-Fluorophenol Reported	8270B	10.23.97	10.27.97	1	Percent	78		
2,4,6-Tribromophenol Rep.	8270B	10.23.97	10.27.97	1	Percent	94		
Nitrobenzene-d5 Reported	8270B	10.23.97	10.27.97	1	Percent	91		
Phenol-d5 Reported	8270B	10.23.97	10.27.97	1	Percent	90		
Terphenyl-d14 Reported	8270B	10.23.97	10.27.97	1	Percent	87		

000100

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: D0#0070  
Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*9      18609-704      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 13.0% moisture)

Compounds by SIM

Benzo(a)pyrene	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
Dibenzo(a,h)anthracene	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
N-Nitrosodi-n-propylamine	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
Bis(2-chloroethyl)ether	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
Surrogates **							
2-Fluorobiphenyl Reported	8270.S	10.27.97	10.27.97	1	Percent	47	
Terphenyl-d14 Reported	8270.S	10.27.97	10.27.97	1	Percent	58	

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000104

SAMPLE NO: 9710422\*9

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 2031 Main Street  
 Irvine, CA 92614

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 Req#: DO#0070  
 Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 7

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE							DATE SAMPLED
9710422*9	18609-704						10.20.97
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
(Following results reported on the basis of 13.0% moisture)							
Pesticides							
Aldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
o,p'-DDD	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDE	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDT	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Dieldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan I	8081	10.22.97	10.28.97	1	ug/kg	0.8	U
Endosulfan II	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan sulfate	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin aldehyde	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor epoxide	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Methoxychlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, alpha isomer	8081	10.22.97	10.28.97	1	ug/kg	0.8	U
alpha-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, beta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, delta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, gamma isomer (Lindane)	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
gamma-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.22.97	10.28.97	1	Percent	115	
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.28.97	1	Percent	79	

000105

SAMPLE NO: 9710422\*9

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 8

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710422\*9 18609-704 10.20.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 13.0% moisture)

## Pesticides Confirmation

Aldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDD	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDE	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDT	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Dieldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan I	8081	10.22.97	10.28.97	1	ug/kg	0.8	U
Endosulfan II	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan sulfate	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin aldehyde	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor epoxide	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Methoxychlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, alpha isomer	8081	10.22.97	10.28.97	1	ug/kg	0.8	U
alpha-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, beta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, delta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, gamma isomer (Lindane)	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
gamma-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.22.97	10.28.97	1	Percent	93	
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.28.97	1	Percent	77	

000106

SAMPLE NO: 9710422\*9

Received: 10.21.97

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Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 9

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE							DATE SAMPLED
9710422*9	18609-704						10.20.97
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
(Following results reported on the basis of 13.0% moisture)							
Polychlorinated Biphenyls							
Aroclor 1016	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1221	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1232	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1242	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1248	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1254	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1260	8081	10.22.97	10.28.97	1	ug/kg	38	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.22.97	10.28.97	1	Percent	115	
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.28.97	1	Percent	79	

# ANALYTICAL REPORT

## 000098

SAMPLE NO: 9710422\*9

Received: 10.21.97

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Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

### DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 1

#### SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*9      18609-704      10.20.97  
-----

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 13.0% moisture)

Total Cyanide	9010A	10.24.97	10.24.97	1	mg/kg	0.57	U
pH	9045		10.24.97	1	Units	8.6	
-Moisture/TNFR	D2216		10.23.97	1	Percent	13	
Aluminum	6010A	10/23/97	10.24.97	1	mg/kg	7000	
Antimony	6010A	10/23/97	10.24.97	1	mg/kg	5.7	U
Arsenic	7060A	10/23/97	10.24.97	1	mg/kg	3.1	
Barium	6010A	10/23/97	10.24.97	1	mg/kg	110	
Beryllium	6010A	10/23/97	10.24.97	1	mg/kg	0.56	
Cadmium	6010A	10/23/97	10.24.97	1	mg/kg	0.57	U
Calcium	6010A	10/23/97	10.24.97	1	mg/kg	4900	
Chromium	6010A	10/23/97	10.24.97	1	mg/kg	8.4	
Cobalt	6010A	10/23/97	10.24.97	1	mg/kg	6	
Copper	6010A	10/23/97	10.24.97	1	mg/kg	8.3	
Iron	6010A	10/23/97	10.24.97	1	mg/kg	11000	
Lead	7421	10/23/97	10.24.97	1	mg/kg	3.2	
Magnesium	6010A	10/23/97	10.24.97	1	mg/kg	4800	
Manganese	6010A	10/23/97	10.24.97	1	mg/kg	210	
Mercury	7471A	10.22.97	10.23.97	1	mg/kg	0.092	U
Molybdenum	6010A	10/23/97	10.24.97	1	mg/kg	2.3	U
Nickel	6010A	10/23/97	10.24.97	1	mg/kg	11	
Potassium	6010A	10/23/97	10.24.97	1	mg/kg	2300	
Selenium	7740	10/23/97	10.27.97	1	mg/kg	0.57	U
Silver	6010A	10/23/97	10.24.97	1	mg/kg	1.1	U
Sodium	6010A	10/23/97	10.24.97	1	mg/kg	290	

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000099

SAMPLE NO: 9710422\*9

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Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*9      18609-704      10.20.97  
-----

PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

(Following results reported on the basis of 13.0% moisture)

-----  
Thallium      6010A    10/23/97    10.24.97    1      mg/kg      5.7    U  
  adium      6010A    10/23/97    10.24.97    1      mg/kg      28  
Zinc          6010A    10/23/97    10.24.97    1      mg/kg      33  
Digestion      3050    10/23/97    10.23.97    1      Date    10/23/97  
Furnace Digestion    3050    10/23/97    10.23.97    1      Date    10/23/97  
-----

000121

SAMPLE NO: 9710422\*10

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DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 11

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*10      18609-705      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

Mod 8015 - Gas

TPH (Gasoline Range)      8015M      10.24.97    1      mg/kg      12    U  
Surrogates \*\*      A  
a,a,a-Trifluorotoluene Rep.    8015M      10.24.97    1      Percent      105  
-----

000120

SAMPLE NO: 9710422\*10

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2031 Main Street  
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Req#: DO#0070  
Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 10

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710422\*10 18609-705 10.20.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

JP-5

TPH (Diesel Range)	8015M	10.24.97	10.27.97	1	mg/kg	12	U
P-5	8015M	10.24.97	10.27.97	1	mg/kg	12	U
Surrogates **							
Naphthalene Reported	8015M	10.24.97	10.27.97	1	Percent	83	
o-Terphenyl Reported	8015M	10.24.97	10.27.97	1	Percent	96	

000122

SAMPLE NO: 9710422\*10

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 12

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710422\*10 18609-705 10.20.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A	10.26.97	1	ug/kg	5.8	U
1,1,2,2-Tetrachloroethane	8260A	10.26.97	1	ug/kg	5.8	U
1,1,2-Trichloroethane	8260A	10.26.97	1	ug/kg	5.8	U
1,1-Dichloroethane	8260A	10.26.97	1	ug/kg	5.8	U
1,1-Dichloroethene	8260A	10.26.97	1	ug/kg	5.8	U
1,2-Dichloroethane	8260A	10.26.97	1	ug/kg	5.8	U
1,2-Dichloropropane	8260A	10.26.97	1	ug/kg	5.8	U
2-Chloroethylvinylether	8260A	10.26.97	1	ug/kg	58	U
2-Hexanone	8260A	10.26.97	1	ug/kg	58	U
Acetone	8260A	10.26.97	1	ug/kg	58	U
Bromodichloromethane	8260A	10.26.97	1	ug/kg	5.8	U
Bromomethane	8260A	10.26.97	1	ug/kg	5.8	U
Benzene	8260A	10.26.97	1	ug/kg	5.8	U
Bromoform	8260A	10.26.97	1	ug/kg	5.8	U
Chlorobenzene	8260A	10.26.97	1	ug/kg	5.8	U
Carbon Tetrachloride	8260A	10.26.97	1	ug/kg	5.8	U
Chloroethane	8260A	10.26.97	1	ug/kg	5.8	U
Chloroform	8260A	10.26.97	1	ug/kg	5.8	U
Chloromethane	8260A	10.26.97	1	ug/kg	5.8	U
Carbon Disulfide	8260A	10.26.97	1	ug/kg	5.8	U
Dibromochloromethane	8260A	10.26.97	1	ug/kg	5.8	U
Ethylbenzene	8260A	10.26.97	1	ug/kg	5.8	U
Methyl ethyl ketone	8260A	10.26.97	1	ug/kg	58	U
Methyl isobutyl ketone	8260A	10.26.97	1	ug/kg	58	U

000123

SAMPLE NO: 9710422\*10

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## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 13

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710422\*10 18609-705 10.20.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

## Volatiles

Methyl-tert-butylether	8260A		10.26.97	1	ug/kg	12	U
Ethylene chloride	8260A		10.26.97	1	ug/kg	5.8	U
Styrene	8260A		10.26.97	1	ug/kg	5.8	U
Trichloroethene	8260A		10.26.97	1	ug/kg	5.8	U
Toluene	8260A		10.26.97	1	ug/kg	5.8	U
Tetrachloroethene	8260A		10.26.97	1	ug/kg	5.8	U
Vinyl acetate	8260A		10.26.97	1	ug/kg	12	U
Vinyl chloride	8260A		10.26.97	1	ug/kg	5.8	U
Total Xylene Isomers	8260A		10.26.97	1	ug/kg	17	U
cis-1,2-Dichloroethene	8260A		10.26.97	1	ug/kg	5.8	U
cis-1,3-Dichloropropene	8260A		10.26.97	1	ug/kg	5.8	U
trans-1,2-Dichloroethene	8260A		10.26.97	1	ug/kg	5.8	U
trans-1,3-Dichloropropene	8260A		10.26.97	1	ug/kg	5.8	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.26.97	1	Percent	74	
4-Bromofluorobenzene Rep.	8260A		10.26.97	1	Percent	97	
Toluene-d8 Reported	8260A		10.26.97	1	Percent	98	
Dibromofluoromethane Rep.	8260A		10.26.97	1	Percent	88	

000114

SAMPLE NO: 9710422\*10

Received: 10.21.97

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Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 4

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*10      18609-705      10.20.97  
-----

PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

1,2,4-Trichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
1,2-Dichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
1,3-Dichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
1,4-Dichlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4,5-Trichlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4,6-Trichlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4-Dichlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4-Dimethylphenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,4-Dinitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	970	U
2,4-Dinitrotoluene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2,6-Dinitrotoluene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Chloronaphthalene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Chlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Methyl-4,6-dinitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	970	U
2-Methylnaphthalene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Methylphenol (o-Cresol)	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Nitroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
2-Nitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
3,3'-Dichlorobenzidine	8270B	10.23.97	10.27.97	1	ug/kg	380	U
3-Nitroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Bromophenylphenylether	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Chloro-3-methylphenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Chloroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Chlorophenylphenylether	8270B	10.23.97	10.27.97	1	ug/kg	380	U

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SAMPLE NO: 9710422\*10

Received: 10.21.97

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P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

00115

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 5

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE							DATE SAMPLED
9710422*10	18609-705						10.20.97
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
(Following results reported on the basis of 14.0% moisture)							
Semi-volatiles							
4-Methylphenol (p-Cresol)	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Nitroaniline	8270B	10.23.97	10.27.97	1	ug/kg	380	U
4-Nitrophenol	8270B	10.23.97	10.27.97	1	ug/kg	970	U
Acenaphthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Acenaphthylene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Anthracene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(a)anthracene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(b)fluoranthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(g,h,i)perylene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Benzo(k)fluoranthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Butylbenzylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Chrysene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Di-n-octylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Dibenzofuran	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Dibutylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	210	J
Diethylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Dimethylphthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Fluoranthene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Fluorene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachlorobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachlorobutadiene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachlorocyclopentadiene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Hexachloroethane	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Indeno(1,2,3-c,d)pyrene	8270B	10.23.97	10.27.97	1	ug/kg	380	U

00116

SAMPLE NO: 9710422\*10

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 6

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710422\*10 18609-705 10.20.97

PARAMETER METHOD PREPED ANALYZED DIL UNITS RESULT FLG

(Following results reported on the basis of 14.0% moisture)

## Semi-volatiles

N-Nitrosodiphenylamine	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Nitrobenzene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Naphthalene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Phenanthrene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Phenol	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Pentachlorophenol	8270B	10.23.97	10.27.97	1	ug/kg	770	U
Pyrene	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Bis(2-chloroethoxy)methane	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Bis(2-chloroisopropyl)ether	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Bis(2-ethylhexyl)phthalate	8270B	10.23.97	10.27.97	1	ug/kg	380	U
Surrogates **							
2-Fluorobiphenyl Reported	8270B	10.23.97	10.27.97	1	Percent	111	
2-Fluorophenol Reported	8270B	10.23.97	10.27.97	1	Percent	93	
2,4,6-Tribromophenol Rep.	8270B	10.23.97	10.27.97	1	Percent	114	
Nitrobenzene-d5 Reported	8270B	10.23.97	10.27.97	1	Percent	109	
Phenol-d5 Reported	8270B	10.23.97	10.27.97	1	Percent	107	
Terphenyl-d14 Reported	8270B	10.23.97	10.27.97	1	Percent	103	

000113

SAMPLE NO: 9710422\*10

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: D0#0070  
Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*10      18609-705      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

Compounds by SIM

Benzo(a)pyrene	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
Dibenzo(a,h)anthracene	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
-Nitrosodi-n-propylamine	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
Bis(2-chloroethyl)ether	8270.S	10.27.97	10.27.97	1	ug/kg	38	U
Surrogates **							
2-Fluorobiphenyl Reported	8270.S	10.27.97	10.27.97	1	Percent	58	
Terphenyl-d14 Reported	8270.S	10.27.97	10.27.97	1	Percent	58	

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000117

SAMPLE NO: 9710422\*10

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 7

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*10      18609-705      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

## Pesticides

Aldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDD	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDE	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDT	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Dieldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan I	8081	10.22.97	10.28.97	1	ug/kg	0.81	U
Endosulfan II	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan sulfate	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin aldehyde	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor epoxide	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Methoxychlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, alpha isomer	8081	10.22.97	10.28.97	1	ug/kg	0.81	U
alpha-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, beta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, delta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, gamma isomer (Lindane)	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
gamma-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.22.97	10.28.97	1	Percent	98	
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.28.97	1	Percent	72	

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000118

SAMPLE NO: 9710422\*10

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 8

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE		DATE SAMPLED					
9710422*10	18609-705	10.20.97					
PARAMETER	METHOD	PREP	ANALYZED	DIL	UNITS	RESULT	FLG
(Following results reported on the basis of 14.0% moisture)							
Pesticides Confirmation							
Aldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDD	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDE	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
p,p'-DDT	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Dieldrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan I	8081	10.22.97	10.28.97	1	ug/kg	0.81	U
Endosulfan II	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endosulfan sulfate	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Endrin aldehyde	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor epoxide	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Heptachlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Methoxychlor	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, alpha isomer	8081	10.22.97	10.28.97	1	ug/kg	0.81	U
alpha-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, beta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, delta isomer	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
BHC, gamma isomer (Lindane)	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
gamma-Chlordane	8081	10.22.97	10.28.97	1	ug/kg	2.3	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.22.97	10.28.97	1	Percent	81	
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.28.97	1	Percent	66	

000119

SAMPLE NO: 9710422\*10

Received: 10.21.97

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2031 Main Street  
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P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 9

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*10      18609-705      10.20.97  
-----

-----  
PARAMETER      METHOD    PREP    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

Polychlorinated Biphenyls

Aroclor 1016	J	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1221	M	8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1232		8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1242		8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1248		8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1254		8081	10.22.97	10.28.97	1	ug/kg	38	U
Aroclor 1260		8081	10.22.97	10.28.97	1	ug/kg	38	U
Surrogates	**							
Decachlorobiphenyl Reported		8081	10.22.97	10.28.97	1	Percent	98	
Tetrachloro-meta-xylene Rpt		8081	10.22.97	10.28.97	1	Percent	72	

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# ANALYTICAL REPORT

000111

SAMPLE NO: 9710422\*10

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2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 1

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*10      18609-705      10.20.97  
-----

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 14.0% moisture)

Total Cyanide	9010A	10.24.97	10.24.97	1	mg/kg	0.58	U
pH	9045		10.24.97	1	Units	8.6	
-Moisture/TNFR	D2216		10.23.97	1	Percent	14	
Aluminum	6010A	10/23/97	10.24.97	1	mg/kg	8100	
Antimony	6010A	10/23/97	10.24.97	1	mg/kg	5.8	U
Arsenic	7060A	10/23/97	10.24.97	1	mg/kg	3.1	
Barium	6010A	10/23/97	10.24.97	1	mg/kg	110	
Beryllium	6010A	10/23/97	10.24.97	1	mg/kg	0.58	
Cadmium	6010A	10/23/97	10.24.97	1	mg/kg	0.58	U
Calcium	6010A	10/23/97	10.24.97	1	mg/kg	6600	
Chromium	6010A	10/23/97	10.24.97	1	mg/kg	9.8	
Cobalt	6010A	10/23/97	10.24.97	1	mg/kg	6.3	
Copper	6010A	10/23/97	10.24.97	1	mg/kg	8.1	
Iron	6010A	10/23/97	10.24.97	1	mg/kg	12000	
Lead	7421	10/23/97	10.24.97	1	mg/kg	3.4	
Magnesium	6010A	10/23/97	10.24.97	1	mg/kg	5200	
Manganese	6010A	10/23/97	10.24.97	1	mg/kg	210	
Mercury	7471A	10.22.97	10.23.97	1	mg/kg	0.093	U
Molybdenum	6010A	10/23/97	10.24.97	1	mg/kg	2.3	U
Nickel	6010A	10/23/97	10.24.97	1	mg/kg	14	
Potassium	6010A	10/23/97	10.24.97	1	mg/kg	2400	
Selenium	7740	10/23/97	10.27.97	1	mg/kg	0.58	U
Silver	6010A	10/23/97	10.24.97	1	mg/kg	1.2	U
Sodium	6010A	10/23/97	10.24.97	1	mg/kg	310	

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000112

SAMPLE NO: 9710422\*10

Received: 10.21.97

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2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*10      18609-705      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 14.0% moisture)

-----  
Thallium      a      6010A    10/23/97    10.24.97    1      mg/kg      3.8    J  
Vanadium      q      6010A    10/23/97    10.24.97    1      mg/kg      29  
Zinc            6010A    10/23/97    10.24.97    1      mg/kg      37  
Digestion      3050    10/23/97    10.23.97    1      Date      10/23/97  
Furnace Digestion    3050    10/23/97    10.23.97    1      Date      10/23/97  
-----

000160

SAMPLE NO: 9710422\*19

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710422\*19 18609-706 10.20.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 16.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.26.97	1	ug/kg	6	U
1,1,2,2-Tetrachloroethane	8260A		10.26.97	1	ug/kg	6	U
1,1,2-Trichloroethane	8260A		10.26.97	1	ug/kg	6	U
1,1-Dichloroethane	8260A		10.26.97	1	ug/kg	6	U
1,1-Dichloroethene	8260A		10.26.97	1	ug/kg	6	U
1,2-Dichloroethane	8260A		10.26.97	1	ug/kg	6	U
1,2-Dichloropropane	8260A		10.26.97	1	ug/kg	6	U
2-Chloroethylvinylether	8260A		10.26.97	1	ug/kg	60	U
2-Hexanone	8260A		10.26.97	1	ug/kg	60	U
Acetone	8260A		10.26.97	1	ug/kg	60	U
Bromodichloromethane	8260A		10.26.97	1	ug/kg	6	U
Bromomethane	8260A		10.26.97	1	ug/kg	6	U
Benzene	8260A		10.26.97	1	ug/kg	6	U
Bromoform	8260A		10.26.97	1	ug/kg	6	U
Chlorobenzene	8260A		10.26.97	1	ug/kg	6	U
Carbon Tetrachloride	8260A		10.26.97	1	ug/kg	6	U
Chloroethane	8260A		10.26.97	1	ug/kg	6	U
Chloroform	8260A		10.26.97	1	ug/kg	6	U
Chloromethane	8260A		10.26.97	1	ug/kg	6	U
Carbon Disulfide	8260A		10.26.97	1	ug/kg	6	U
Dibromochloromethane	8260A		10.26.97	1	ug/kg	6	U
Ethylbenzene	8260A		10.26.97	1	ug/kg	6	U
Methyl ethyl ketone	8260A		10.26.97	1	ug/kg	60	U
Methyl isobutyl ketone	8260A		10.26.97	1	ug/kg	60	U

000161

SAMPLE NO: 9710422\*19

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 3

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*19      18609-706      10.20.97  
-----

PARAMETER      METHOD    PREP    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

(Following results reported on the basis of 16.0% moisture)

## Volatiles

Methyl-tert-butylether	8260A		10.26.97	1	ug/kg	12	U
Methylene chloride	8260A		10.26.97	1	ug/kg	6	U
Styrene	8260A		10.26.97	1	ug/kg	6	U
Trichloroethene	8260A		10.26.97	1	ug/kg	6	U
Toluene	8260A		10.26.97	1	ug/kg	6	U
Tetrachloroethene	8260A		10.26.97	1	ug/kg	6	U
Vinyl acetate	8260A		10.26.97	1	ug/kg	12	U
Vinyl chloride	8260A		10.26.97	1	ug/kg	6	U
Total Xylene Isomers	8260A		10.26.97	1	ug/kg	18	U
cis-1,2-Dichloroethene	8260A		10.26.97	1	ug/kg	6	U
cis-1,3-Dichloropropene	8260A		10.26.97	1	ug/kg	6	U
trans-1,2-Dichloroethene	8260A		10.26.97	1	ug/kg	6	U
trans-1,3-Dichloropropene	8260A		10.26.97	1	ug/kg	6	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.26.97	1	Percent	67	
4-Bromofluorobenzene Rep.	8260A		10.26.97	1	Percent	102	
Toluene-d8 Reported	8260A		10.26.97	1	Percent	97	
Dibromofluoromethane Rep.	8260A		10.26.97	1	Percent	85	

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# ANALYTICAL REPORT

000162

SAMPLE NO: 9710422\*20

Received: 10.21.97

Mailed:

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 1

### SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*20      18609-707      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS      RESULT    FLG  
-----

Mod 8015 - Gas

TPH (Gasoline Range)      8015M      10.23.97    1      mg/L      0.1    U

Surrogates \*\*

m,p,a-Trifluorotoluene Rep.    8015M      10.23.97    1      Percent      90  
-----

000163

SAMPLE NO: 9710422\*20

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
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P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 2

## SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*20      18609-707      10.20.97  
-----

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
-----							
Volatiles							
1,1,1-Trichloroethane	8260A		10.22.97	1	ug/L	5	U
1,1,2,2-Tetrachloroethane	8260A		10.22.97	1	ug/L	5	U
1,1,2-Trichloroethane	8260A		10.22.97	1	ug/L	5	U
1,1-Dichloroethane	8260A		10.22.97	1	ug/L	5	U
1,1-Dichloroethene	8260A		10.22.97	1	ug/L	5	U
1,2-Dichloroethane	8260A		10.22.97	1	ug/L	5	U
1,2-Dichloropropane	8260A		10.22.97	1	ug/L	5	U
2-Chloroethylvinylether	8260A		10.22.97	1	ug/L	50	U
2-Hexanone	8260A		10.22.97	1	ug/L	50	U
Acetone	8260A		10.22.97	1	ug/L	50	U
Bromodichloromethane	8260A		10.22.97	1	ug/L	5	U
Bromomethane	8260A		10.22.97	1	ug/L	5	U
Benzene	8260A		10.22.97	1	ug/L	5	U
Bromoform	8260A		10.22.97	1	ug/L	5	U
Chlorobenzene	8260A		10.22.97	1	ug/L	5	U
Carbon Tetrachloride	8260A		10.22.97	1	ug/L	5	U
Chloroethane	8260A		10.22.97	1	ug/L	5	U
Chloroform	8260A		10.22.97	1	ug/L	5	U
Chloromethane	8260A		10.22.97	1	ug/L	5	U
Carbon Disulfide	8260A		10.22.97	1	ug/L	0	
Dibromochloromethane	8260A		10.22.97	1	ug/L	5	U
Ethylbenzene	8260A		10.22.97	1	ug/L	5	U
Methyl ethyl ketone	8260A		10.22.97	1	ug/L	50	U
Methyl isobutyl ketone	8260A		10.22.97	1	ug/L	50	U
Methyl-tert-butylether	8260A		10.22.97	1	ug/L	10	U
Methylene chloride	8260A		10.22.97	1	ug/L	5	U

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000164

SAMPLE NO: 9710422\*20

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 3

SAMPLE DESCRIPTION, AQUEOUS SAMPLE							DATE SAMPLED	
9710422*20	18609-707						10.20.97	
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG	
Volatiles								
Styrene	8260A		10.22.97	1	ug/L	5	U	
Trichloroethene	8260A		10.22.97	1	ug/L	5	U	
Toluene	8260A		10.22.97	1	ug/L	5	U	
Tetrachloroethene	8260A		10.22.97	1	ug/L	5	U	
Vinyl acetate	8260A		10.22.97	1	ug/L	50	U	
Vinyl chloride	8260A		10.22.97	1	ug/L	5	U	
Total Xylene Isomers	8260A		10.22.97	1	ug/L	15	U	
cis-1,2-Dichloroethene	8260A		10.22.97	1	ug/L	5	U	
cis-1,3-Dichloropropene	8260A		10.22.97	1	ug/L	5	U	
trans-1,2-Dichloroethene	8260A		10.22.97	1	ug/L	5	U	
trans-1,3-Dichloropropene	8260A		10.22.97	1	ug/L	5	U	
Surrogates **								
1,2-Dichloroethane-d4 Rep.	8260A		10.22.97	1	Percent	104		
4-Bromofluorobenzene Rep.	8260A		10.22.97	1	Percent	82		
Toluene-d8 Reported	8260A		10.22.97	1	Percent	86		
Dibromofluoromethane Rep.	8260A		10.22.97	1	Percent	88		

000174

SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

REPORT OF ANALYTICAL RESULTS

Page 10

SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*21      18609-708      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

Mod 8015 - Gas

TPH (Gasoline Range)      8015M      10.23.97    1      mg/L      0.069    J  
Surrogates    \*\*  
a,a,a-Trifluorotoluene Rep.    8015M      10.23.97    1      Percent      94  
-----

-2-

000173

SAMPLE NO: 9710422\*21

Received: 10.21.97

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OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

REPORT OF ANALYTICAL RESULTS

Page 9

SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
9710422*21	18609-708						10.20.97
JP-5							
TPH (Diesel Range)	8015M	10.22.97	10.24.97	1	mg/L	0.5	U
JP-5	8015M	10.22.97	10.24.97	1	mg/L	0.5	U
Surrogates **							
Naphthalene Reported	8015M	10.22.97	10.24.97	1	Percent	70	
-Terphenyl Reported	8015M	10.22.97	10.24.97	1	Percent	86	

000175

SAMPLE NO: 9710422\*21

Received: 10.21.97

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2031 Main Street  
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P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 11

## SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*21      18609-708      10.20.97  
-----

-----  
PARAMETER                      METHOD    PREPED    ANALYZED    DIL            UNITS    RESULT    FLG  
-----

## Volatiles

1,1,1-Trichloroethane	8260A		10.23.97	1	ug/L	5	U
1,1,2,2-Tetrachloroethane	8260A		10.23.97	1	ug/L	5	U
1,1,2-Trichloroethane	8260A		10.23.97	1	ug/L	5	U
1,1-Dichloroethane	8260A		10.23.97	1	ug/L	5	U
1,1-Dichloroethene	8260A		10.23.97	1	ug/L	5	U
1,2-Dichloroethane	8260A		10.23.97	1	ug/L	5	U
1,2-Dichloropropane	8260A		10.23.97	1	ug/L	5	U
2-Chloroethylvinylether	8260A		10.23.97	1	ug/L	50	U
2-Hexanone	8260A		10.23.97	1	ug/L	11	J
Acetone	8260A		10.23.97	1	ug/L	38	J
Bromodichloromethane	8260A		10.23.97	1	ug/L	5	U
Bromomethane	8260A		10.23.97	1	ug/L	5	U
Benzene	8260A		10.23.97	1	ug/L	5	U
Bromoform	8260A		10.23.97	1	ug/L	5	U
Chlorobenzene	8260A		10.23.97	1	ug/L	5	U
Carbon Tetrachloride	8260A		10.23.97	1	ug/L	5	U
Chloroethane	8260A		10.23.97	1	ug/L	5	U
Chloroform	8260A		10.23.97	1	ug/L	5	U
Chloromethane	8260A		10.23.97	1	ug/L	5	U
Carbon Disulfide	8260A		10.23.97	1	ug/L	5	U
Dibromochloromethane	8260A		10.23.97	1	ug/L	5	U
Ethylbenzene	8260A		10.23.97	1	ug/L	5	U
Methyl ethyl ketone	8260A		10.23.97	1	ug/L	33	J
Methyl isobutyl ketone	8260A		10.23.97	1	ug/L	50	U
Methyl-tert-butylether	8260A		10.23.97	1	ug/L	10	U
Methylene chloride	8260A		10.23.97	1	ug/L	5	U

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SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 12

SAMPLE DESCRIPTION, AQUEOUS SAMPLE		DATE SAMPLED					
9710422*21	18609-708	10.20.97					
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
Volatiles							
Styrene	8260A		10.23.97	1	ug/L	5	U
Trichloroethene	8260A		10.23.97	1	ug/L	5	U
Toluene	8260A		10.23.97	1	ug/L	5	U
Tetrachloroethene	8260A		10.23.97	1	ug/L	5	U
Vinyl acetate	8260A		10.23.97	1	ug/L	50	U
Vinyl chloride	8260A		10.23.97	1	ug/L	5	U
Total Xylene Isomers	8260A		10.23.97	1	ug/L	15	U
cis-1,2-Dichloroethene	8260A		10.23.97	1	ug/L	5	U
cis-1,3-Dichloropropene	8260A		10.23.97	1	ug/L	5	U
trans-1,2-Dichloroethene	8260A		10.23.97	1	ug/L	5	U
trans-1,3-Dichloropropene	8260A		10.23.97	1	ug/L	5	U
Surrogates **							
1,2-Dichloroethane-d4 Rep.	8260A		10.23.97	1	Percent	84	
4-Bromofluorobenzene Rep.	8260A		10.23.97	1	Percent	84	
Toluene-d8 Reported	8260A		10.23.97	1	Percent	88	
Dibromofluoromethane Rep.	8260A		10.23.97	1	Percent	80	

001432

SAMPLE NO: 9710422\*9

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## DRY WEIGHT REPORT OF ANALYTICAL RESULTS

Page 12

## SAMPLE DESCRIPTION, NON-AQUEOUS SAMPLE

DATE SAMPLED

9710422\*9 18609-704 10.20.97

PARAMETER	METHOD	PREP	ANALYZED	DIL	UNITS	RESULT	FLG
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(Following results reported on the basis of 13.0% moisture)

## Volatiles

1,1,1-Trichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1,2,2-Tetrachloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1,2-Trichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1-Dichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,1-Dichloroethene	8260A		10.26.97	1	ug/kg	5.7	U
1,2-Dichloroethane	8260A		10.26.97	1	ug/kg	5.7	U
1,2-Dichloropropane	8260A		10.26.97	1	ug/kg	5.7	U
2-Chloroethylvinylether	8260A		10.26.97	1	ug/kg	57	U
2-Hexanone	8260A		10.26.97	1	ug/kg	57	U
Acetone	8260A		10.26.97	1	ug/kg	57	U
Bromodichloromethane	8260A		10.26.97	1	ug/kg	5.7	U
Bromomethane	8260A		10.26.97	1	ug/kg	5.7	U
Benzene	8260A		10.26.97	1	ug/kg	5.7	U
Bromoform	8260A		10.26.97	1	ug/kg	5.7	U
Chlorobenzene	8260A		10.26.97	1	ug/kg	5.7	U
Carbon Tetrachloride	8260A		10.26.97	1	ug/kg	5.7	U
Chloroethane	8260A		10.26.97	1	ug/kg	5.7	U
Chloroform	8260A		10.26.97	1	ug/kg	5.7	U
Chloromethane	8260A		10.26.97	1	ug/kg	5.7	U
Carbon Disulfide	8260A		10.26.97	1	ug/kg	5.7	U
Dibromochloromethane	8260A		10.26.97	1	ug/kg	5.7	U
Ethylbenzene	8260A		10.26.97	1	ug/kg	5.7	U
Methyl ethyl ketone	8260A		10.26.97	1	ug/kg	57	U
Methyl isobutyl ketone	8260A		10.26.97	1	ug/kg	57	U

000167

SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 3

SAMPLE DESCRIPTION, AQUEOUS SAMPLE							DATE SAMPLED
9710422*21	18609-708						10.20.97
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
B/N,A Ext.Pri.Poll.							
1,2,4-Trichlorobenzene	8270B	10.23.97	10.25.97	1	ug/L	10	U
1,2-Dichlorobenzene	8270B	10.23.97	10.25.97	1	ug/L	10	U
1,3-Dichlorobenzene	8270B	10.23.97	10.25.97	1	ug/L	10	U
1,4-Dichlorobenzene	8270B	10.23.97	10.25.97	1	ug/L	10	U
2,4,5-Trichlorophenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
2,4,6-Trichlorophenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
2,4-Dichlorophenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
2,4-Dimethylphenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
2,4-Dinitrophenol	8270B	10.23.97	10.25.97	1	ug/L	25	U
2,4-Dinitrotoluene	8270B	10.23.97	10.25.97	1	ug/L	10	U
2,6-Dinitrotoluene	8270B	10.23.97	10.25.97	1	ug/L	10	U
2-Chloronaphthalene	8270B	10.23.97	10.25.97	1	ug/L	10	U
2-Chlorophenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
2-Methyl-4,6-dinitrophenol	8270B	10.23.97	10.25.97	1	ug/L	25	U
2-Methylnaphthalene	8270B	10.23.97	10.25.97	1	ug/L	10	U
2-Methylphenol (o-Cresol)	8270B	10.23.97	10.25.97	1	ug/L	10	U
2-Nitroaniline	8270B	10.23.97	10.25.97	1	ug/L	10	U
2-Nitrophenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
3,3'-Dichlorobenzidine	8270B	10.23.97	10.25.97	1	ug/L	10	U
3-Nitroaniline	8270B	10.23.97	10.25.97	1	ug/L	10	U
4-Bromophenylphenylether	8270B	10.23.97	10.25.97	1	ug/L	10	U
4-Chloro-3-methylphenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
4-Chloroaniline	8270B	10.23.97	10.25.97	1	ug/L	10	U
4-Chlorophenylphenylether	8270B	10.23.97	10.25.97	1	ug/L	10	U
4-Methylphenol (p-Cresol)	8270B	10.23.97	10.25.97	1	ug/L	10	U
4-Nitroaniline	8270B	10.23.97	10.25.97	1	ug/L	10	U

000168

SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
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2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 4

## SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*21      18609-708      10.20.97  
-----

PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

B/N,A Ext.Pri.Poll.

4-Nitrophenol	8270B	10.23.97	10.25.97	1	ug/L	25	U
Acenaphthene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Acenaphthylene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Anthracene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Benzo(a)anthracene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Benzo(a)pyrene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Benzo(b)fluoranthene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Benzo(g,h,i)perylene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Benzo(k)fluoranthene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Butylbenzylphthalate	8270B	10.23.97	10.25.97	1	ug/L	10	U
Chrysene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Di-n-octylphthalate	8270B	10.23.97	10.25.97	1	ug/L	10	U
Dibenzo(a,h)anthracene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Dibenzofuran	8270B	10.23.97	10.25.97	1	ug/L	10	U
Dibutylphthalate	8270B	10.23.97	10.25.97	1	ug/L	10	U
Diethylphthalate	8270B	10.23.97	10.25.97	1	ug/L	10	U
Dimethylphthalate	8270B	10.23.97	10.25.97	1	ug/L	10	U
Fluoranthene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Fluorene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Hexachlorobenzene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Hexachlorobutadiene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Hexachlorocyclopentadiene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Hexachloroethane	8270B	10.23.97	10.25.97	1	ug/L	10	U
Indeno(1,2,3-c,d)pyrene	8270B	10.23.97	10.25.97	1	ug/L	10	U
N-Nitrosodiphenylamine	8270B	10.23.97	10.25.97	1	ug/L	10	U
N-Nitrosodi-n-propylamine	8270B	10.23.97	10.25.97	1	ug/L	10	U

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000169

SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 5

## SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
9710422*21	18609-708						10.20.97
B/N,A Ext.Pri.Poll.							
Nitrobenzene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Naphthalene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Phenanthrene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Phenol	8270B	10.23.97	10.25.97	1	ug/L	10	U
Pentachlorophenol	8270B	10.23.97	10.25.97	1	ug/L	20	U
Pyrene	8270B	10.23.97	10.25.97	1	ug/L	10	U
Bis(2-chloroethoxy)methane	8270B	10.23.97	10.25.97	1	ug/L	10	U
Bis(2-chloroethyl)ether	8270B	10.23.97	10.25.97	1	ug/L	10	U
Bis(2-chloroisopropyl)ether	8270B	10.23.97	10.25.97	1	ug/L	10	U
Bis(2-ethylhexyl)phthalate	8270B	10.23.97	10.25.97	1	ug/L	10	U
Surrogates **							
2-Fluorobiphenyl Reported	8270B	10.23.97	10.25.97	1	Percent	76	
2-Fluorophenol Reported	8270B	10.23.97	10.25.97	1	Percent	52	
2,4,6-Tribromophenol Rep.	8270B	10.23.97	10.25.97	1	Percent	81	
Nitrobenzene-d5 Reported	8270B	10.23.97	10.25.97	1	Percent	68	
Phenol-d5 Reported	8270B	10.23.97	10.25.97	1	Percent	47	
Terphenyl-d14 Reported	8270B	10.23.97	10.25.97	1	Percent	76	

000170

SAMPLE NO: 9710422\*21

Received: 10.21.97

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OHM Remediation Services Corp.  
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Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 6

## SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

9710422\*21 18609-708 10.20.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
Pesticides							
Aldrin	8081	10.22.97	10.22.97	1	ug/L	0.03	U
p,p'-DDD	8081	10.22.97	10.22.97	1	ug/L	0.03	U
p,p'-DDE	8081	10.22.97	10.22.97	1	ug/L	0.03	U
p,p'-DDT	8081	10.22.97	10.22.97	1	ug/L	0.05	U
Dieldrin	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Endosulfan I	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Endosulfan II	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Endosulfan sulfate	8081	10.22.97	10.22.97	1	ug/L	0.05	U
Endrin	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Endrin aldehyde	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Heptachlor epoxide	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Heptachlor	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Methoxychlor	8081	10.22.97	10.22.97	1	ug/L	0.05	U
BHC, alpha isomer	8081	10.22.97	10.22.97	1	ug/L	0.03	U
alpha-Chlordane	8081	10.22.97	10.22.97	1	ug/L	0.03	U
BHC, beta isomer	8081	10.22.97	10.22.97	1	ug/L	0.03	U
BHC, delta isomer	8081	10.22.97	10.22.97	1	ug/L	0.03	U
BHC, gamma isomer (Lindane)	8081	10.22.97	10.22.97	1	ug/L	0.03	U
gamma-Chlordane	8081	10.22.97	10.22.97	1	ug/L	0.03	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.22.97	10.22.97	1	Percent	108	
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.22.97	1	Percent	92	

000171

SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 7

SAMPLE DESCRIPTION, AQUEOUS SAMPLE		DATE SAMPLED						
9710422*21	18609-708	10.20.97						
PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG	
Pesticides Confirmation								
Aldrin	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
p,p'-DDD	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
p,p'-DDE	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
p,p'-DDT	8081	10.22.97	10.22.97	1	ug/L	0.05	U	
dieldrin	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Endosulfan I	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Endosulfan II	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Endosulfan sulfate	8081	10.22.97	10.22.97	1	ug/L	0.05	U	
Endrin	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Endrin aldehyde	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Heptachlor epoxide	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Heptachlor	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Methoxychlor	8081	10.22.97	10.22.97	1	ug/L	0.05	U	
BHC, alpha isomer	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
alpha-Chlordane	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
BHC, beta isomer	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
BHC, delta isomer	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
BHC, gamma isomer (Lindane)	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
gamma-Chlordane	8081	10.22.97	10.22.97	1	ug/L	0.03	U	
Surrogates **								
Decachlorobiphenyl Reported	8081	10.22.97	10.22.97	1	Percent	108		
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.22.97	1	Percent	96		

000172

SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

REPORT OF ANALYTICAL RESULTS

Page 8

SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*21      18609-708      10.20.97  
-----

-----  
PARAMETER      METHOD    PREPED    ANALYZED    DIL      UNITS    RESULT    FLG  
-----

Polychlorinated Biphenyls

Aroclor 1016	8081	10.22.97	10.22.97	1	ug/L	1	U
Aroclor 1221	8081	10.22.97	10.22.97	1	ug/L	1	U
Aroclor 1232	8081	10.22.97	10.22.97	1	ug/L	1	U
Aroclor 1242	8081	10.22.97	10.22.97	1	ug/L	1	U
Aroclor 1248	8081	10.22.97	10.22.97	1	ug/L	1	U
Aroclor 1254	8081	10.22.97	10.22.97	1	ug/L	1	U
Aroclor 1260	8081	10.22.97	10.22.97	1	ug/L	1	U
Surrogates **							
Decachlorobiphenyl Reported	8081	10.22.97	10.22.97	1	Percent	108	
Tetrachloro-meta-xylene Rpt	8081	10.22.97	10.22.97	1	Percent	92	

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# ANALYTICAL REPORT

000165

SAMPLE NO: 9710422\*21

Received: 10.21.97

Mailed:

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

## REPORT OF ANALYTICAL RESULTS

Page 1

### SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

-----  
9710422\*21      18609-708      10.20.97  
-----

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
Total Cyanide	335.2	10.23.97	10.23.97	1	mg/L	0.02	U
	150.1		10.22.97	1	Units	5.2	
Aluminum	6010A	10/24/97	10.24.97	1	ug/L	500	U
Antimony	6010A	10/24/97	10.24.97	1	ug/L	500	U
Arsenic	7060A	10/24/97	10.24.97	1	ug/L	5	U
Barium	6010A	10/24/97	10.24.97	1	ug/L	1.3	J
Beryllium	6010A	10/24/97	10.24.97	1	ug/L	10	U
Cadmium	6010A	10/24/97	10.24.97	1	ug/L	2.3	J
Calcium	6010A	10/24/97	10.24.97	1	ug/L	330	J
Chromium	6010A	10/24/97	10.24.97	1	ug/L	50	U
Cobalt	6010A	10/24/97	10.24.97	1	ug/L	50	U
Copper	6010A	10.24.97	10.24.97	1	ug/L	5	J
Iron	6010A	10/24/97	10.24.97	1	ug/L	35	J
Lead	7421	10/24/97	10.24.97	1	ug/L	5	U
Magnesium	6010A	10/24/97	10.24.97	1	ug/L	100	J
Manganese	6010A	10/24/97	10.24.97	1	ug/L	1.2	J
Mercury	7470A	10.24.97	10.27.97	1	ug/L	0.2	U
Molybdenum	6010A	10/24/97	10.24.97	1	ug/L	100	U
Nickel	6010A	10/24/97	10.24.97	1	ug/L	150	U
Potassium	6010A	10/24/97	10.24.97	1	ug/L	5000	U
Selenium	7740	10/24/97	10.27.97	1	ug/L	5	U
Silver	6010A	10/24/97	10.24.97	1	ug/L	50	U
Sodium	6010A	10/24/97	10.24.97	1	ug/L	930	J
Thallium	6010A	10/24/97	10.24.97	1	ug/L	400	U
Vanadium	6010A	10/24/97	10.24.97	1	ug/L	100	U
Zinc	6010A	10/24/97	10.24.97	1	ug/L	19	J

## AMENDED REPORT

*WA* 11-24-97

VOC Analytical Laboratories, Inc.

801 Western Avenue, Glendale, CA 91201 - Phone: (818) 247-5737 - Fax: (818) 247-9797

000166

SAMPLE NO: 9710422\*21

Received: 10.21.97

Ms. Mary Schneider  
OHM Remediation Services Corp.  
2031 Main Street  
Irvine, CA 92614

P.O.#: 1040171  
Req#: DO#0070  
Project: 18609/EL.TORO

REPORT OF ANALYTICAL RESULTS

Page 2

SAMPLE DESCRIPTION, AQUEOUS SAMPLE

DATE SAMPLED

9710422\*21 18609-708 10.20.97

PARAMETER	METHOD	PREPED	ANALYZED	DIL	UNITS	RESULT	FLG
Digestion	3010	10/24/97	10.24.97	1	Date	10/24/97	
Furnace Digestion	3020	10/24/97	10.24.97	1	Date	10/24/97	

1  
Q  
1

***Appendix I***  
***LDC Data Validation Report***

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 16, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Gasoline  
**Validation Level:** NFESC Level C  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710387

**Sample Identification**

18609-610  
18609-612  
18609-614  
18609-616  
18609-618  
18609-620  
18609-622  
18609-624  
18609-626  
18609-628  
18609-630  
18609-632  
18609-637A  
18609-636

## Introduction

This data review covers 12 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

Initial calibration of compounds was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990 .

### **b. Calibration Verification**

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

## **IV. Accuracy and Precision Data**

### **a. Surrogate Recovery**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

### **b. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **c. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## **V. Target Compound Identification**

Raw data were not reviewed for this SDG.

## **VI. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG.

## **VII. System Performance**

Raw data were not reviewed for this SDG.

## **VIII. Overall Assessment of Data**

Data flags have been summarized at the end of this report.

## **IX. Field Duplicates**

No field duplicates were identified in this SDG.

## **X. Field Blanks**

Sample 18609-636 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found in this blank.

**MCAS El Toro  
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG  
G9710387**

No Sample Data Qualified in this SDG

**MCAS El Toro  
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification  
Summary - SDG G9710387**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 16, 1997  
**LDC Report Date:** June 29, 1998  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Extractables  
**Validation Level:** NFESC Level C  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710387

**Sample Identification**

18609-610  
18609-612  
18609-614  
18609-616  
18609-618  
18609-620  
18609-622  
18609-624  
18609-626  
18609-628  
18609-630  
18609-632  
18609-637A

## Introduction

This data review covers 12 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

Initial calibration of compounds was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990 .

### **b. Calibration Verification**

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

## **IV. Accuracy and Precision Data**

### **a. Surrogate Recovery**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

### **b. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **c. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **V. Target Compound Identification**

Raw data were not reviewed for this SDG.

## **VI. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG.

## **VII. System Performance**

Raw data were not reviewed for this SDG.

## **VIII. Overall Assessment of Data**

Data flags have been summarized at the end of this report.

## **IX. Field Duplicates**

No field duplicates were identified in this SDG.

## **X. Field Blanks**

No field blanks were identified in this SDG.

**MCAS EI Toro  
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG  
G9710387**

No Sample Data Qualified in this SDG

**MCAS EI Toro  
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data  
Qualification Summary - SDG G9710387**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 16, 1997  
**LDC Report Date:** June 29, 1998  
**Matrix:** Soil/Water  
**Parameters:** Volatiles  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710387

**Sample Identification**

18609-610	18609-627
18609-612	18609-629
18609-614	18609-631
18609-616	18609-633
18609-618	18609-637A
18609-620	18609-636
18609-622	18609-621MS
18609-624	18609-621MSD
18609-626	
18609-628	
18609-630	
18609-632	
18609-611	
18609-613	
18609-615**	
18609-617	
18609-619	
18609-621	
18609-623	
18609-625	

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 26 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

### I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

### II. GC/MS Instrument Performance Check

The samples were analyzed after the BFB tuning. The instrument performance check could not be verified at the 12 hour interval.

All ion abundance requirements were met.

### III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
9/10/97	Acetone Vinyl acetate	0.047 ( $\geq 0.05$ ) 0.046 ( $\geq 0.05$ )	18609-610 18609-612 18609-614 18609-616 18609-615** B71015331 B71015851	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
10/22/97	Acetone Vinyl acetate	0.032 ( $\geq 0.05$ ) 0.030 ( $\geq 0.05$ )	18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-617 18609-619 18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633 18609-621MS 18609-621MSD B7110791	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A
10/8/97	Acetone Vinyl acetate 2-Butanone	0.019 ( $\geq 0.05$ ) 0.025 ( $\geq 0.05$ ) 0.029 ( $\geq 0.05$ )	All water samples in SDG G9710387	J (all detects) R (all non-detects)	A

#### IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 25.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds with the following exceptions:

Date	Compound	%D (Limits)	Associated Samples	Flag	A or P
10/20/97 (B1816)	Carbon disulfide 2-Butanone 2-Chloroethylvinyl ether	50.3 ( $\leq 50$ ) 68.0 ( $\leq 50$ ) 57.9 ( $\leq 50$ )	18609-610 18609-612 18609-614 18609-616 B71015331	J J J	A

Date	Compound	%D (Limits)	Associated Samples	Flag	A or P
10/23/97 (B1901)	2-Hexanone	53.1 ( $\leq 50$ )	18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-617 18609-619 18609-321MS 18609-621MSD B7110791	J	A
10/23/97 (B1922)	Ethylbenzene Chloroethane Carbon disulfide 2-Hexanone	103.6 ( $\leq 25$ ) 99.1 ( $\leq 50$ ) 96.8 ( $\leq 50$ ) 66.6 ( $\leq 50$ )	18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	J	P
10/20/97 (A1426)	2-Chloroethylvinyl ether	90.4 ( $\leq 50$ )	B7101136	J	A
10/21/97 (A1448)	2-Chloroethylvinyl ether	69.2 ( $\leq 50$ )	18609-637A 18609-636	J J	A

All of the continuing calibration RRF values were within validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
10/20/97 (B1816)	Vinyl acetate	0.036 ( $\geq 0.05$ )	18609-610 18609-612 18609-614 18609-616 B71015331	J (all detects) R (all non-detects)	A
10/21/97 (B1847A)	Vinyl acetate	0.035 ( $\geq 0.05$ )	18609-615** B71015851	J (all detects) R (all non-detects)	A

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
10/23/97 (B1901)	Acetone Vinyl acetate 2-Butanone	0.035 ( $\geq 0.05$ ) 0.025 ( $\geq 0.05$ ) 0.029 ( $\geq 0.05$ )	18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-617 18609-619 18609-621MS 18609-621MSD B7110791	J (all detects) R (all non-detects)	A
10/23/97 (B1922)	Chloroethane Acetone Vinyl acetate 2-Butanone	0.001 ( $\geq 0.05$ ) 0.027 ( $\geq 0.05$ ) 0.027 ( $\geq 0.05$ ) 0.027 ( $\geq 0.05$ )	18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	J (all detects) R (all non-detects)	A
10/20/97 (A1426)	Acetone Vinyl acetate 2-Butanone Carbon tetrachloride	0.021 ( $\geq 0.05$ ) 0.028 ( $\geq 0.05$ ) 0.035 ( $\geq 0.05$ ) 0.001 ( $\geq 0.05$ )	B7101136	J (all detects) R (all non-detects)	A
10/21/97 (A1448)	Acetone Vinyl acetate 2-Butanone	0.021 ( $\geq 0.05$ ) 0.022 ( $\geq 0.05$ ) 0.038 ( $\geq 0.05$ )	18609-637A 18609-636	J (all detects) R (all non-detects)	A

## V. Blanks

Method blanks were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
18609-637A 18609-636 18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	All TCL compounds	Method blank associated with these samples was not run within the same 12 hour shift.	Method blanks must be run within the same 12 hour shift.	None	P

No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
B7101136	10/20/97	Acetone	6.7 ug/L	All water samples in SDG G9710387
B7110791	10/23/97	Acetone Methyl ethyl ketone	32 ug/Kg 4.1 ug/Kg	18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-617 18609-619 18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633
B7101585	10/21/97	Acetone Methyl ethyl ketone Methyl-tert-butyl ether	28 ug/Kg 2.5 ug/Kg 1.5 ug/Kg	18609-615**

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
18609-637A	Acetone	12 ug/L	50U ug/L
18609-636	Acetone	12 ug/L	50U ug/L
18609-628	Acetone	23 ug/Kg	58U ug/Kg
18609-613	Acetone	22 ug/Kg	53U ug/Kg

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG G9710387	All TCL compounds	The LCS was analyzed as a continuing calibration standard.	The LCS should be analyzed independently from the calibration.	None	P

Sample	Compound	Finding	Criteria	Flag	A or P
18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	All TCL compounds	LCS associated with these samples was not run within the same 12 hour shift.	LCSs must be run within the same 12 hour shift.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Internal Standards

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

## XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

### XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

### XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

### XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

### XVI. Field Duplicates

No field duplicates were identified in this SDG.

### XVII. Field Blanks

Sample 18609-636 was identified as a trip blank. No volatile contaminants were found in this blank with the following exceptions:

Trip Blank ID	Compound	Concentration (ug/L)
18609-636	Acetone Ethylbenzene	12 0.63

Sample 18609-637A was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
18609-637A	Acetone	12

MCAS EI Toro  
 Volatiles - Data Qualification Summary - SDG G9710387

SDG	Sample	Compound	Flag	A or P	Reason
G9710387	18609-610 18609-612 18609-614 18609-616 18609-615** 18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-617 18609-619 18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	Acetone  Vinyl acetate	J (all detects) R (all non-detects)  J (all detects) R (all non-detects)	A	Initial calibration (RRF)
G9710387	18609-637A 18609-636	Acetone Vinyl acetate 2-Butanone	J (all detects) R (all non-detects)	A	Initial calibration (RRF)
G9710387	18609-610 18609-612 18609-614 18609-616	Carbon disulfide 2-Butanone 2-Chloroethylvinyl ether	J J J	A	Continuing calibration (%D)
G9710387	18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-617 18609-619	2-Hexanone	J	A	Continuing calibration (%D)
G9710387	18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	Ethylbenzene Chloroethane Carbon disulfide 2-Hexanone	J	P	Continuing calibration (%D)

SDG	Sample	Compound	Flag	A or P	Reason
G9710387	18609-637A 18609-636	2-Chloroethylvinyl ether	J J	A	Continuing calibration (%D)
G9710387	18609-610 18609-612 18609-614 18609-616 18609-615**	Vinyl acetate	J (all detects) R (all non-detects)	A	Continuing calibration (RRF)
G9710387	18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-617 18609-619 18609-637A 18609-636	Acetone Vinyl acetate 2-Butanone	J (all detects) R (all non-detects)	A	Continuing calibration (RRF)
G9710387	18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	Chloroethane Acetone Vinyl acetate 2-Butanone	J (all detects) R (all non-detects)	A	Continuing calibration (RRF)
G9710387	18609-637A 18609-636 18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633	All TCL compounds	None	P	Method blanks

SDG	Sample	Compound	Flag	A or P	Reason
G9710387	18609-610 18609-612 18609-614 18609-616 18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632 18609-611 18609-613 18609-615** 18609-617 18609-619 18609-621 18609-623 18609-625 18609-627 18609-629 18609-631 18609-633 18609-637A 18609-636	All TCL compounds	None	P	Laboratory control samples

**MCAS EI Toro  
Volatiles - Laboratory Blank Data Qualification Summary - SDG G9710387**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
G9710387	18609-637A	Acetone	50U ug/L	A
G9710387	18609-636	Acetone	50U ug/L	A
G9710387	18609-628	Acetone	58U ug/Kg	A
G9710387	18609-613	Acetone	53U ug/Kg	A

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 16, 1997  
**LDC Report Date:** June 29, 1998  
**Matrix:** Soil  
**Parameters:** Semivolatiles  
**Validation Level:** NFESC Level C  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710387

**Sample Identification**

18609-610  
18609-612  
18609-614  
18609-616  
18609-618  
18609-620  
18609-622  
18609-624  
18609-626  
18609-628  
18609-630  
18609-632

## Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270B for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

The samples were analyzed after the DFTPP tuning. The instrument performance check could not be verified at the 12 hour interval.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 20.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
B7101587*1*MB	10/21/97	Di-n-butylphthalate	220 ug/Kg	All samples in SDG G9710387

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found

in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
18609-610	Di-n-butylphthalate	470 ug/Kg	470U ug/Kg
18609-612	Di-n-butylphthalate	282 ug/Kg	370U ug/Kg
18609-614	Di-n-butylphthalate	333 ug/Kg	370U ug/Kg
18609-616	Di-n-butylphthalate	200 ug/Kg	370U ug/Kg
18609-618	Di-n-butylphthalate	190 ug/Kg	370U ug/Kg
18609-620	Di-n-butylphthalate	230 ug/Kg	350U ug/Kg
18609-622	Di-n-butylphthalate	250 ug/Kg	350U ug/Kg
18609-624	Di-n-butylphthalate	190 ug/Kg	350U ug/Kg
18609-626	Di-n-butylphthalate	290 ug/Kg	350U ug/Kg
18609-628	Di-n-butylphthalate	310 ug/Kg	380U ug/Kg
18609-630	Di-n-butylphthalate	280 ug/Kg	380U ug/Kg
18609-632	Di-n-butylphthalate	260 ug/Kg	390U ug/Kg

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Samples	Compound	Finding	Criteria	Flag	A or P
All samples in SDG G9710387	N-Nitroso-di-n-propylamine	The MS/MSD associated with these samples was not spiked with this compound.	The MS/MSD must be performed according to the QAPP.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Samples	Compound	Finding	Criteria	Flag	A or P
All samples in SDG G9710387	N-Nitroso-di-n-propylamine	The LCS/LCSD associated with these samples was not spiked with this compound.	The LCS/LCSD must be performed according to the QAPP.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

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

### XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

### XII. Compound Quantitation and CRQLs

Raw data were not reviewed for this SDG.

### XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

### XIV. System Performance

Raw data were not reviewed for this SDG.

### XV. Overall Assessment

Data flags have been summarized at the end of the report.

### XVI. Field Duplicates

No field duplicates were identified in this SDG.

## **XVII. Field Blanks**

No field blanks were identified in this SDG.

**MCAS El Toro  
Semivolatiles - Data Qualification Summary - SDG G9710387**

SDG	Sample	Compound	Flag	A or P	Reason
G9710387	18609-610 18609-612 18609-614 18609-616 18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632	N-Nitroso-di-n-propylamine	None	P	Matrix spike/Matrix spike duplicates
G9710387	18609-610 18609-612 18609-614 18609-616 18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632	N-Nitroso-di-n-propylamine	None	P	Matrix spike/Matrix spike duplicates

**MCAS El Toro  
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG G9710387**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
G9710387	18609-610	Di-n-butylphthalate	470U ug/Kg	A
G9710387	18609-612	Di-n-butylphthalate	370U ug/Kg	A
G9710387	18609-614	Di-n-butylphthalate	370U ug/Kg	A
G9710387	18609-616	Di-n-butylphthalate	370U ug/Kg	A
G9710387	18609-618	Di-n-butylphthalate	370U ug/Kg	A
G9710387	18609-620	Di-n-butylphthalate	350U ug/Kg	A
G9710387	18609-622	Di-n-butylphthalate	350U ug/Kg	A

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
G9710387	18609-624	Di-n-butylphthalate	350U ug/Kg	A
G9710387	18609-626	Di-n-butylphthalate	350U ug/Kg	A
G9710387	18609-628	Di-n-butylphthalate	380U ug/Kg	A
G9710387	18609-630	Di-n-butylphthalate	380U ug/Kg	A
G9710387	18609-632	Di-n-butylphthalate	390U ug/Kg	A

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 16, 1997  
**LDC Report Date:** June 29, 1998  
**Matrix:** Soil  
**Parameters:** Semivolatiles  
**Validation Level:** NFESC Level C  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710387

**Sample Identification**

18609-610  
18609-612  
18609-614  
18609-616  
18609-618  
18609-620  
18609-622  
18609-624  
18609-626  
18609-628  
18609-630  
18609-632

## Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270-SIM for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/MS Instrument Performance Check**

The samples were analyzed after the DFTPP tuning. The instrument performance check could not be verified at the 12 hour interval.

All ion abundance requirements were met.

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were

within QC limits.

### **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **IX. Regional Quality Assurance and Quality Control**

Not applicable.

### **X. Internal Standards**

Internal standard data were not provided and therefore not reviewed.

### **XI. Target Compound Identifications**

Raw data were not reviewed for this SDG.

### **XII. Compound Quantitation and CRQLs**

Raw data were not reviewed for this SDG.

### **XIII. Tentatively Identified Compounds (TICs)**

Raw data were not reviewed for this SDG.

### **XIV. System Performance**

Raw data were not reviewed for this SDG.

### **XV. Overall Assessment**

Data flags have been summarized at the end of the report.

### **XVI. Field Duplicates**

No field duplicates were identified in this SDG.

### **XVII. Field Blanks**

No field blanks were identified in this SDG.

**MCAS El Toro  
Semivolatiles - Data Qualification Summary - SDG G9710387**

No Sample Data Qualified in this SDG

**MCAS El Toro  
Semivolatiles - Laboratory Blank Data Qualification Summary - SDG G9710387**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 16, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil  
**Parameters:** Chlorinated Pesticides & PCBs  
**Validation Level:** NFESC Level C  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710387

**Sample Identification**

18609-610  
18609-612  
18609-614  
18609-616  
18609-618  
18609-620  
18609-622  
18609-624  
18609-626  
18609-628  
18609-630  
18609-632

## Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081 for Chlorinated Pesticides and PCBs.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

## III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990 .

## IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

The individual 4,4'-DDT and Endrin breakdowns were less than 20.0% .

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide or PCB contaminants were found in the method blanks.

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
18609-626	DB-608	Tetrachloro-m-xylene	146 (35-135)	All TCL compounds	J (all detects)	A

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each

matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **IX. Regional Quality Assurance and Quality Control**

Not applicable.

### **X. Pesticide Cleanup Checks**

#### **a. Florisil Cartridge Check**

Florisil cleanup was not required and therefore not performed in this SDG.

#### **b. GPC Calibration**

GPC cleanup was not required and therefore not performed in this SDG.

### **XI. Target Compound Identification**

Raw data were not reviewed for this SDG.

### **XII. Compound Quantitation and Reported CRQLs**

Raw data were not reviewed for this SDG.

### **XIII. Overall Assessment of Data**

Data flags are summarized at the end of this report.

### **XIV. Field Duplicates**

No field duplicates were identified in this SDG.

### **XV. Field Blanks**

No field blanks were identified in this SDG.

**MCAS El Toro  
Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG G9710387**

SDG	Sample	Compound	Flag	A or P	Reason
G9710387	18609-626	Tetrachloro-m-xylene	J (all detects)	A	Surrogate spikes (%R)

**MCAS El Toro  
Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary -  
SDG G9710387**

No Sample Data Qualified in this SDG

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 16, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil  
**Parameters:** Metals & Cyanide  
**Validation Level:** NFESC Level C  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710387

### Sample Identification

18609-610  
18609-612  
18609-614  
18609-616  
18609-618  
18609-620  
18609-622  
18609-624  
18609-626  
18609-628  
18609-630  
18609-632

## Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals and EPA SW 846 Method 9010A for Cyanide. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG G9710387	Cyanide	Calibration verification not performed at the required frequencies.	Calibration verification should be performed immediately following initial calibration and once every ten samples.	None	P

## III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks.

## IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

## V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
18609-598MS/MSD (All samples in SDG G9710387)	Selenium	15 (73-122)	19 (73-122)	-	J (all detects) R (all non-detects)	A
18609-598MS/MSD (All samples in SDG G9710387)	Silver Barium Magnesium Arsenic Mercury	79 (80-120) 69 (80-120) 125 (80-120) 69 (74-120) -	- - - 59 (74-120) 75 (77-120)	- - - - -	J J J (all detects) J J	A

## VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

## VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Internal Standards (ICP-MS)

ICP-MS was not utilized in this SDG.

## IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption QC were not reviewed for this SDG.

## X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met.

## XI. Sample Result Verification

Raw data were not reviewed for this SDG.

## XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

## XIII. Field Duplicates

No field duplicates were identified in this SDG.

#### **XIV. Field Blanks**

No field blanks were identified in this SDG.

MCAS EI Toro  
 Metals & Cyanide - Data Qualification Summary - SDG G9710387

SDG	Sample	Analyte	Flag	A or P	Reason
G9710387	18609-610 18609-612 18609-614 18609-616 18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632	Cyanide	None	P	Calibration
G9710387	18609-610 18609-612 18609-614 18609-616 18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632	Selenium	J (all detects) R (all non-detects)	A	Matrix spike analysis (%R)
G9710387	18609-610 18609-612 18609-614 18609-616 18609-618 18609-620 18609-622 18609-624 18609-626 18609-628 18609-630 18609-632	Silver Barium Magnesium Arsenic Mercury	J J J (all detects) J J	A	Matrix spike analysis (%R)

MCAS EI Toro  
 Metals & Cyanide - Laboratory Blank Data Qualification Summary - SDG G9710387

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 20, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Gasoline  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710422

**Sample Identification**

18609-690  
18609-688  
18609-692  
18609-693  
18609-696  
18609-702  
18609-700\*\*  
18609-698  
18609-704  
18609-705  
18609-707  
18609-708  
18609-702MS  
18609-702MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 12 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Gasoline.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UU Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

Initial calibration of compounds was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990 .

### **b. Calibration Verification**

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as gasoline contaminants were found in the method blanks.

## **IV. Accuracy and Precision Data**

### **a. Surrogate Recovery**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

### **b. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **c. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **V. Target Compound Identification**

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples

reviewed by Level C criteria.

## VI. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## VII. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## VIII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

## IX. Field Duplicates

Samples 18609-704 and 18609-705 were identified as field duplicates. No chlorinated pesticides or PCBs were detected in any of the samples.

## X. Field Blanks

Sample 18609-707 was identified as a trip blank. No total petroleum hydrocarbons as gasoline contaminants were found in this blank.

Sample 18609-708 was identified as a rinsate. No total petroleum hydrocarbons as gasoline contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (mg/L)
18609-708	TPH as gasoline	0.069

**MCAS El Toro  
Total Petroleum Hydrocarbons as Gasoline - Data Qualification Summary - SDG  
G9710422**

No Sample Data Qualified in this SDG

**MCAS El Toro  
Total Petroleum Hydrocarbons as Gasoline - Laboratory Blank Data Qualification  
Summary - SDG G9710422**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 20, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil/Water  
**Parameters:** Total Petroleum Hydrocarbons as Extractables  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710422

**Sample Identification**

18609-690  
18609-688  
18609-692  
18609-693  
18609-696  
18609-702  
18609-700\*\*  
18609-698  
18609-704  
18609-705  
18609-708  
18609-702MS  
18609-702MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 12 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8015 modified for Total Petroleum Hydrocarbons (TPH) as Extractables.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section III.

Field duplicates are summarized in Section IX.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Calibration**

### **a. Initial Calibration**

Initial calibration of compounds was performed as required by the method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990 .

### **b. Calibration Verification**

Calibration verification was performed at required frequencies. The percent differences (%D) of amounts in continuing standard mixtures were within the 15.0% QC limits.

## **III. Blanks**

Method blanks were reviewed for each matrix as applicable. No total petroleum hydrocarbons as extractable contaminants were found in the method blanks.

## **IV. Accuracy and Precision Data**

### **a. Surrogate Recovery**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

### **b. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### **c. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## **V. Target Compound Identification**

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples

reviewed by Level C criteria.

## **VI. Compound Quantitation and CRQLs**

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## **VII. System Performance**

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## **VIII. Overall Assessment of Data**

Data flags have been summarized at the end of this report.

## **IX. Field Duplicates**

Samples 18609-704 and 18609-705 were identified as field duplicates. No total petroleum hydrocarbons as extractables were detected in any of the samples.

## **X. Field Blanks**

Sample 18609-708 was identified as a rinsate. No total petroleum hydrocarbons as extractable contaminants were found in this blank.

**MCAS EI Toro  
Total Petroleum Hydrocarbons as Extractables - Data Qualification Summary - SDG  
G9710422**

No Sample Data Qualified in this SDG

**MCAS EI Toro  
Total Petroleum Hydrocarbons as Extractables - Laboratory Blank Data  
Qualification Summary - SDG G9710422**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 20, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil/Water  
**Parameters:** Volatiles  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.

**Sample Delivery Group (SDG):** G9710422

**Sample Identification**

18609-690	18609-708
18609-688	18609-702MS
18609-692	18609-702MSD
18609-693	
18609-696	
18609-702	
18609-700**	
18609-698	
18609-704	
18609-705	
18609-691	
18609-689	
18609-695	
18609-694	
18609-697	
18609-703	
18609-701	
18609-699	
18609-706	
18609-707	

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 21 soil samples and 2 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260A for Volatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

The samples were analyzed after the BFB tuning. The instrument performance check could not be verified at the 12 hour interval.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All water samples in SDG G9710422	Vinyl acetate	A four point calibration was performed.	A five point calibration is specified by the method.	None	P

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

Average relative response factors (RRF) for all volatile target compounds and system monitoring compounds were within validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
10/22/97	Acetone Vinyl acetate	0.032 ( $\geq 0.05$ ) 0.030 ( $\geq 0.05$ )	All soil samples in SDG G9710422	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A
10/10/97	Vinyl acetate 4-Methyl-2-pentanone	0.025 ( $\geq 0.05$ ) 0.043 ( $\geq 0.05$ )	All water samples in SDG G9710422	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration

RRF and the continuing calibration RRF were less than or equal to 25.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds with the following exceptions:

Date	Compound	%D (Limits)	Associated Samples	Flag	A or P
10/25/97	Vinyl chloride 2-Butanone 4-Methyl-2-pentanone 2-Hexanone	25.6 ( $\leq 25$ ) 58.0 ( $\leq 50$ ) 55.0 ( $\leq 50$ ) 63.4 ( $\leq 50$ )	18609-691 18609-689 18609-695 18609-694 B71016321	J J J J	P
10/26/97	Vinyl chloride Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone	27.2 ( $\leq 25$ ) 53.1 ( $\leq 50$ ) 60.0 ( $\leq 50$ ) 56.3 ( $\leq 50$ ) 62.2 ( $\leq 50$ )	18609-704 18609-705 18609-697 18609-703 18609-701 18609-699 18609-706	J	P
10/22/97	Bromomethane 2-Butanone	50.2 ( $\leq 50$ ) 76.8 ( $\leq 50$ )	18609-707 B71014181	J J	A
10/23/97	Bromomethane Vinyl acetate	59.1 ( $\leq 50$ ) 71.3 ( $\leq 50$ )	18609-708	J	A

All of the continuing calibration RRF values were within validation criteria with the following exceptions:

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
10/25/97 (B1977)	Acetone Vinyl acetate 2-Butanone 4-Methyl-2-pentanone	0.030 ( $\geq 0.05$ ) 0.021 ( $\geq 0.05$ ) 0.021 ( $\geq 0.05$ ) 0.036 ( $\geq 0.05$ )	18609-691 18609-689 18609-695 18609-694 B71016321	J (all detects) R (all non-detects)	A
10/25/97 (B1988A)	Acetone Vinyl acetate 2-Butanone	0.020 ( $\geq 0.05$ ) 0.025 ( $\geq 0.05$ ) 0.029 ( $\geq 0.05$ )	B71016391	J (all detects) R (all non-detects)	A
10/26/97	Acetone Vinyl acetate 2-Butanone 4-Methyl-2-pentanone	0.015 ( $\geq 0.05$ ) 0.021 ( $\geq 0.05$ ) 0.020 ( $\geq 0.05$ ) 0.035 ( $\geq 0.05$ )	18609-704 18609-705 18609-697 18609-703 18609-701 18609-699 18609-706	J (all detects) R (all non-detects)	A

Date	Compound	RRF (Limits)	Associated Samples	Flag	A or P
10/27/97	Acetone Vinyl acetate	0.043 ( $\geq 0.05$ ) 0.028 ( $\geq 0.05$ )	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-702MS 18609-702MSD B71017381	J (all detects) R (all non-detects)	A
10/22/97	Vinyl acetate	0.024 ( $\geq 0.05$ )	18609-707 B71014181	J (all detects) R (all non-detects)	A
10/23/97	Vinyl acetate	0.007 ( $\geq 0.05$ )	18609-708 B71015841	J (all detects) R (all non-detects)	A

## V. Blanks

Method blanks were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
18609-704 18609-705 18609-697 18609-703 18609-701 18609-699 18609-706	All TCL compounds	Method blank associated with these samples was not run within the same 12 hour shift.	Method blanks must be run within the same 12 hour shift.	None	P

No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
B71017381	10/27/97	Acetone Methyl ethyl ketone Methyl-tert-butyl ether	16 ug/Kg 1.8 ug/Kg 1.5 ug/Kg	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-702MS 18609-702MSD

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
B71016321	10/24/97	2-Hexanone Acetone Methyl ethyl ketone Methyl isobutyl ketone	1.4 ug/Kg 97 ug/Kg 1.9 ug/Kg 0.82 ug/Kg	18609-691 18609-689 18609-695 18609-694
B71016391	10/25/97	Acetone	6.2 ug/Kg	18609-704 18609-705 18609-697 18609-703 18609-701 18609-699 18609-706
B71014181	10/22/97	Methylene chloride Acetone Chlorobenzene	0.51 ug/L 4.5 ug/L 0.54 ug/L	18609-707
B71015841	10/23/97	Acetone Chlorobenzene Toluene	1.2 ug/L 0.21 ug/L 0.26 ug/L	18609-708

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks.

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Sample	Compound	Finding	Criteria	Flag	A or P
All samples in SDG G9710422	All TCL compounds	The LCS was analyzed as a continuing calibration standard.	The LCS should be analyzed independently from the calibration.	None	P

Sample	Compound	Finding	Criteria	Flag	A or P
18609-704 18609-705 18609-691 18609-689 18609-695 18609-694 18609-697 18609-703 18609-701 18609-699 18609-706	All TCL compounds	LCS associated with these samples was not run within the same 12 hour shift.	LCSs must be run within the same 12 hour shift.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
C71031571/81 (18609-708 B71015841)	1,1-Dichloroethene Trichloroethene	- 128 (71-125)	- -	23 ( $\leq 20$ ) -	J J (all detects)	A

#### IX. Regional Quality Assurance and Quality Control

Not applicable.

#### X. Internal Standards

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

#### XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

#### XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

#### XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

#### XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

#### XV. Overall Assessment of Data

Data flags have been summarized at the end of the report.

#### XVI. Field Duplicates

Samples 18609-704 and 18609-705 were identified as field duplicates. No semivolatiles were detected in any of the samples.

#### XVII. Field Blanks

Sample 18609-707 was identified as a trip blank. No volatile contaminants were found in this blank.

Sample 18609-708 was identified as a rinsate. No volatile contaminants were found in this blank with the following exceptions:

Rinsate ID	Compound	Concentration (ug/L)
18609-708	2-Hexanone	11
	Acetone	38
	Methyl ethyl ketone	33

MCAS EI Toro  
 Volatiles - Data Qualification Summary - SDG G9710422

SDG	Sample	Compound	Flag	A or P	Reason
G9710422	18609-707 18609-708	Vinyl acetate	None	P	Initial calibration
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-704 18609-705 18609-691 18609-689 18609-695 18609-694 18609-697 18609-703 18609-701 18609-699 18609-706	Acetone  Vinyl acetate	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A	Initial calibration (RRF)
G9710422	18609-707 18609-708	Vinyl acetate  4-Methyl-2-pentanone	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A	Initial calibration (RRF)
G9710422	18609-691 18609-689 18609-695 18609-694	Vinyl chloride 2-Butanone 4-Methyl-2-pentanone 2-Hexanone	J J J J	P	Continuing calibration (%D)
G9710422	18609-704 18609-705 18609-697 18609-703 18609-701 18609-699 18609-706	Vinyl chloride Acetone 2-Butanone 4-Methyl-2-pentanone 2-Hexanone	J	P	Continuing calibration (%D)
G9710422	18609-707	Bromomethane 2-Butanone	J J	A	Continuing calibration (%D)
G9710422	18609-708	Bromomethane Vinyl acetate	J	A	Continuing calibration (%D)

SDG	Sample	Compound	Flag	A or P	Reason
G9710422	18609-691 18609-689 18609-695 18609-694 18609-704 18609-705 18609-697 18609-703 18609-701 18609-699 18609-706	Acetone Vinyl acetate 2-Butanone 4-Methyl-2-pentanone	J (all detects) R (all non-detects)	A	Continuing calibration (RRF)
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698	Acetone Vinyl acetate	J (all detects) R (all non-detects)	A	Continuing calibration (RRF)
G9710422	18609-707 18609-708	Vinyl acetate	J (all detects) R (all non-detects)	A	Continuing calibration (RRF)
G9710422	18609-704 18609-705 18609-697 18609-703 18609-701 18609-699 18609-706	All TCL compounds	None	P	Method blanks
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-704 18609-705 18609-691 18609-689 18609-695 18609-694 18609-697 18609-703 18609-701 18609-699 18609-706 18609-707 18609-708	All TCL compounds	None	P	Laboratory control samples
G9710422	18609-708	1,1-Dichloroethene Trichloroethene	J J (all detects)	A	Laboratory control samples (%R)(RPD)

**MCAS El Toro**  
**Volatiles - Laboratory Blank Data Qualification Summary - SDG G9710422**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 20, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil/Water  
**Parameters:** Semivolatiles  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710422

**Sample Identification**

18609-690  
18609-688  
18609-692  
18609-693  
18609-696  
18609-702  
18609-700\*\*  
18609-698  
18609-704  
18609-705  
18609-701  
18609-708  
18609-702MS  
18609-702MSD  
18609-704MS  
18609-704MSD  
18609-701MS  
18609-701MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 17 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270B for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

The samples were analyzed after the DFTPP tuning. The instrument performance check could not be verified at the 12 hour interval.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 20.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
B7101781*1*MB	10/21/97	Di-n-butylphthalate	150 ug/Kg	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700**

Method Blank ID	Extraction Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
B7101401*1*MB	10/23/97	Di-n-butylphthalate	110 ug/Kg	18609-698 18609-704 18609-705
B7101740*1*MB	10/23/97	Di-n-butylphthalate	4.9 ug/L	18609-708

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
18609-690	Di-n-butylphthalate	170 ug/Kg	400U ug/Kg
18609-688	Di-n-butylphthalate	160 ug/Kg	390U ug/Kg
18609-692	Di-n-butylphthalate	230 ug/Kg	380U ug/Kg
18609-693	Di-n-butylphthalate	200 ug/Kg	380U ug/Kg
18609-696	Di-n-butylphthalate	180 ug/Kg	370U ug/Kg
18609-702	Di-n-butylphthalate	230 ug/Kg	390U ug/Kg
18609-704	Di-n-butylphthalate	210 ug/Kg	380U ug/Kg
18609-705	Di-n-butylphthalate	210 ug/Kg	380U ug/Kg

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable with the following exceptions:

Samples	Compound	Finding	Criteria	Flag	A or P
All soil samples in SDG G9710422	N-Nitroso-di-n-propylamine	The MS/MSD associated with these samples was not spiked with this compound.	The MS/MSD must be performed according to the QAPP.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable with the following exceptions:

Samples	Compound	Finding	Criteria	Flag	A or P
18609-701 B711182*1*MB	N-Nitroso-di-n-propylamine	The LCS/LCSD associated with these samples was not spiked with this compound.	The LCS/LCSD must be performed according to the QAPP.	None	P

Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
C7103350*1*LC/51*1*LC (All water samples in SDG G9710422)	4-Chloroaniline	160 (46-126)	160 (46-126)	-	J (all detects)	A
	4-Nitroaniline	197 (40-166)	197 (40-166)	-	J (all detects)	
C711107*1*LC/08*1*LC (18609-701 B711182*1*MB)	4-Nitrophenol	-	-	37 (≤30)	J	A
	Pentachlorophenol	-	-	38 (≤30)	J	
	Pyrene	-	-	66 (≤30)	J	

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

Internal standard data were not provided for Phenanthrene-d10, Chrysene-d12, and Perylene-d12 for samples 18609-701, 18609-701MS, and 18609-701MSD and therefore were not reviewed.

All internal standard areas and retention times for 1,4-Dichlorobenzene-d4, Naphthalene-d8, and Acenaphthene-d10 for samples 18609-701, 18609-701MS, and 18609-701MSD were within QC limits.

All internal standard areas and retention times for all other samples were within QC limits.

### **XI. Target Compound Identifications**

All target compound identifications were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

### **XII. Compound Quantitation and CRQLs**

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

### **XIII. Tentatively Identified Compounds (TICs)**

Tentatively identified compounds were not reported by the laboratory.

### **XIV. System Performance**

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

### **XV. Overall Assessment**

Data flags have been summarized at the end of the report.

### **XVI. Field Duplicates**

Samples 18609-704 and 18609-705 were identified as field duplicates. No semivolatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	18609-704	18609-705	
Di-n-butylphthalate	210	210	0

### **XVII. Field Blanks**

Sample 18609-708 was identified as a rinsate. No semivolatile contaminants were found in this blank.

**MCAS El Toro**  
**Semivolatiles - Data Qualification Summary - SDG G9710422**

SDG	Sample	Compound	Flag	A or P	Reason
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-704 18609-705 18609-701	N-Nitroso-di-n-propylamine	None	P	Matrix spike/Matrix spike duplicates
G9710422	18609-701	N-Nitroso-di-n-propylamine	None	P	Laboratory control samples
G9710422	18609-708	4-Chloroaniline 4-Nitroaniline	J (all detects) J (all detects)	A	Laboratory control samples (%R)
G9710422	18609-701	4-Nitrophenol Pentachlorophenol Pyrene	J J J	A	Laboratory control samples (RPD)

**MCAS El Toro**  
**Semivolatiles - Laboratory Blank Data Qualification Summary - SDG G9710422**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
G9710422	18609-690	Di-n-butylphthalate	400U ug/Kg	A
G9710422	18609-688	Di-n-butylphthalate	390U ug/Kg	A
G9710422	18609-692	Di-n-butylphthalate	380U ug/Kg	A
G9710422	18609-693	Di-n-butylphthalate	380U ug/Kg	A
G9710422	18609-696	Di-n-butylphthalate	370U ug/Kg	A
G9710422	18609-702	Di-n-butylphthalate	390U ug/Kg	A
G9710422	18609-704	Di-n-butylphthalate	380U ug/Kg	A
G9710422	18609-705	Di-n-butylphthalate	380U ug/Kg	A

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
G9710422	18609-692	Di-n-butylphthalate	380U ug/Kg	A
G9710422	18609-693	Di-n-butylphthalate	380U ug/Kg	A
G9710422	18609-696	Di-n-butylphthalate	370U ug/Kg	A
G9710422	18609-702	Di-n-butylphthalate	390U ug/Kg	A
G9710422	18609-704	Di-n-butylphthalate	380U ug/Kg	A
G9710422	18609-705	Di-n-butylphthalate	380U ug/Kg	A

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 20, 1997  
**LDC Report Date:** June 29, 1998  
**Matrix:** Soil  
**Parameters:** Semivolatiles  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710422

**Sample Identification**

18609-690  
18609-688  
18609-692  
18609-693  
18609-696  
18609-702  
18609-700\*\*  
18609-698  
18609-704  
18609-705  
18609-701  
18609-702MS  
18609-702MSD  
18609-704MS  
18609-704MSD  
18609-701MS  
18609-701MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 17 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270-SIM for Semivolatiles.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. GC/MS Instrument Performance Check**

The samples were analyzed after the DFTPP tuning. The instrument performance check could not be verified at the 12 hour interval.

All ion abundance requirements were met.

## **III. Initial Calibration**

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

Average relative response factors (RRF) for all semivolatile target compounds and system monitoring compounds were greater than or equal to 0.05 as required.

## **IV. Continuing Calibration**

Continuing calibration was performed at the required frequencies.

All of the continuing calibration percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were less than or equal to 30.0% for all calibration check compounds and less than or equal to 50.0% for all other compounds.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

## **V. Blanks**

Method blanks were reviewed for each matrix as applicable. No semivolatile contaminants were found in the method blanks.

## **VI. Surrogate Spikes**

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## **VII. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were

within QC limits.

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
97209LCS/D (18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 97209MB)	N-Nitroso-di-n-propylamine Pentachlorophenol	- -	136 (27-135) 187 (38-146)	- -	J (all detects) J	A

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

Internal standard data were not provided and therefore not reviewed.

### XI. Target Compound Identifications

The raw data was not provided for sample 18609-700\* and therefore not reviewed.

Raw data were not evaluated for the samples reviewed by Level C criteria.

### XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

### XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

### XIV. System Performance

The system performance was within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed

by Level C criteria.

#### **XV. Overall Assessment**

Data flags have been summarized at the end of the report.

#### **XVI. Field Duplicates**

Samples 18609-704 and 18609-705 were identified as field duplicates. No semivolatiles were detected in any of the samples.

#### **XVII. Field Blanks**

No field blanks were identified in this SDG.

**MCAS EI Toro**  
**Semivolatiles - Data Qualification Summary - SDG G9710422**

SDG	Sample	Compound	Flag	A or P	Reason
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700**	N-Nitroso-di-n-propylamine Pentachlorophenol	J (all detects) J	A	Laboratory control samples (%R)(RPD)

**MCAS EI Toro**  
**Semivolatiles - Laboratory Blank Data Qualification Summary - SDG G9710422**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 20, 1997  
**LDC Report Date:** June 30, 1998  
**Matrix:** Soil/Water  
**Parameters:** Chlorinated Pesticides & PCBs  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.

**Sample Delivery Group (SDG):** G9710422

**Sample Identification**

18609-690  
18609-688  
18609-692  
18609-693  
18609-696  
18609-702  
18609-700\*\*  
18609-698  
18609-704  
18609-705  
18609-708  
18609-702MS  
18609-702MSD

\*\*Indicates sample underwent NFESC Level D review.

## Introduction

This data review covers 12 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081 for Chlorinated Pesticides and PCBs.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (February 1994) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
  - J Indicates an estimated value.
  - R Quality control indicates the data is not usable.
  - N Presumptive evidence of presence of the constituent.
  - UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
  - A Indicates the finding is based upon technical validation criteria.
  - P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

Performance evaluation mixture data were not provided for sample 18609-708 and therefore not reviewed.

## III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination ( $r^2$ ) was greater than or equal to 0.990 .

Retention time windows were not provided and therefore not reviewed.

## IV. Continuing Calibration

Continuing calibration at the beginning of the batch including sample 18609-700\* was not provided and therefore not reviewed. Continuing calibration was performed at required frequencies for all other samples.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
10/27/97	CCV OCP 25ppb	DB-608	alpha-BHC	20	18609-688 18609-692 97198MB	J	P
10/28/97 (00:38)	CCV OCP 25ppb	DB-608	alpha-BHC	16	18609-690 18609-693 18609-696 18609-702 18609-698 18609-704 18609-705	J	P

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
10/28/97 (11:25)	CCV OCP 25ppb	DB-608	alpha-BHC Gamma-BHC	27 16	18609-702MS 18609-702MSD	J J	P

Retention time windows were not provided and therefore not reviewed.

The individual 4,4'-DDT and Endrin breakdowns were less than or equal to 20.0% .

#### V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide or PCB contaminants were found in the method blanks.

#### VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

#### VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

#### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
97195LCS/LCSD (All water samples in SDG G9710422)	gamma-BHC	-	-	43 (≤30)	J	A
	Heptachlor	-	-	43 (≤30)	J	
	Aldrin	-	-	42 (≤30)	J	
	Dieldrin	-	-	38 (≤30)	J	
	Endrin	-	-	36 (≤30)	J	
	4,4'-DDT	-	-	42 (≤30)	J	

#### IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Pesticide Cleanup Checks

### a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

### b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

## XI. Target Compound Identification

Retention time windows were not provided and therefore not reviewed.

## XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria for samples on which an NFESC Level D review was performed with the following exceptions:

Sample	Compound	Reported Concentration	Recalculated Concentration	Flag	A or P
18609-700**	4,4'-DDE	2.2 ug/Kg	4.6 ug/Kg	J	P

Raw data were not evaluated for the samples reviewed by Level C criteria.

## XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

## XIV. Field Duplicates

Samples 18609-704 and 18609-705 were identified as field duplicates. No chlorinated pesticides or PCBs were detected in any of the samples.

## XV. Field Blanks

Sample 18609-708 was identified as a rinsate. No chlorinated pesticide or PCB contaminants were found in this blank.

**MCAS EI Toro  
Chlorinated Pesticides & PCBs - Data Qualification Summary - SDG G9710422**

SDG	Sample	Compound	Flag	A or P	Reason
G9710422	18609-688 18609-692 18609-690 18609-693 18609-696 18609-702 18609-698 18609-704 18609-705	alpha-BHC	J	P	Continuing calibration (%D)
G9710422	18609-708	gamma-BHC Heptachlor Aldrin Dieldrin Endrin 4,4'-DDT	J J J J J	A	Laboratory control samples (RPD)
G9710422	18609-700**	4,4'-DDE	J	P	Compound quantitation and CRQLs

**MCAS EI Toro  
Chlorinated Pesticides & PCBs - Laboratory Blank Data Qualification Summary -  
SDG G9710422**

No Sample Data Qualified in this SDG

**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** MCAS El Toro  
**Collection Date:** October 20, 1997  
**LDC Report Date:** July 1, 1998  
**Matrix:** Soil/Water  
**Parameters:** Metals & Cyanide  
**Validation Level:** NFESC Level C & D  
**Laboratory:** VOC Analytical Laboratories, Inc.  
**Sample Delivery Group (SDG):** G9710422

**Sample Identification**

18609-690  
18609-688  
18609-692  
18609-693  
18609-696  
18609-702  
18609-700\*\*  
18609-698  
18609-704  
18609-705  
18609-708  
18609-708MS  
18609-708MSD  
18609-702MS  
18609-702MSD

\*\*Indicates sample underwent NFESC Level D review

## Introduction

This data review covers 12 soil samples and 3 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals and EPA SW 846 Method 9010A for Cyanide. The metals analyzed were Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Mercury, Molybdenum, Nickel, Potassium, Selenium, Silver, Sodium, Thallium, Vanadium, and Zinc.

The review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

Samples indicated by a double asterisk on the front cover underwent a NFESC Level D review. A NFESC Level C review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by Level C criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- N Presumptive evidence of presence of the constituent.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met with the following exceptions:

Sample	Analyte	Finding	Criteria	Flag	A or P
All samples in SDG G9710422	Cyanide	Calibration verification not performed at the required frequencies.	Calibration verification should be performed immediately following initial calibration and once every ten samples.	None	P

## III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found above the reporting limit in the initial, continuing and preparation blanks.

## IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

## V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) analyses were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
18609-702MS/MSD (All samples in SDG G9710422)	Selenium	14 (73-122)	23 (73-122)	51 ( $\leq 25$ )	J (all detects) R (all non-detects)	A
	Antimony	24 (80-120)	26 (80-120)	-	J (all detects) R (all non-detects)	
18609-702MS/MSD (All samples in SDG G9710422)	Mercury	76 (77-120)	-	-	J	A
	Arsenic	-	-	28 ( $\leq 15$ )	J	
	Aluminum	195 (80-120)	140 (80-120)	-	J (all detects)	
	Iron	212 (80-120)	157 (80-120)	-	J (all detects)	
	Magnesium	131 (80-120)	-	-	J (all detects)	

## VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

## VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Internal Standards

ICP-MS was not utilized in this SDG.

## IX. Furnace Atomic Absorption QC

All graphite furnace atomic absorption QC were within validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for samples reviewed by Level C criteria.

## X. ICP Serial Dilution

Although ICP serial dilution analysis was not required by the method, it was performed by the laboratory. The analysis criteria were met.

## XI. Sample Result Verification

All sample result verifications met validation criteria for samples on which a NFESC Level D review was performed. Raw data were not evaluated for the samples reviewed by Level C criteria.

## XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

### XIII. Field Duplicates

Samples 18609-704 and 18609-705 were identified as field duplicates. No metals or cyanide were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	18609-704	18609-705	
Aluminum	7000	8100	15
Arsenic	3.1	3.1	0
Barium	110	110	0
Beryllium	0.56	0.58	4
Calcium	4900	6600	30
Chromium	8.4	9.8	15
Cobalt	6.0	6.3	5
Copper	8.3	8.1	2
Iron	11000	12000	9
Lead	3.2	3.4	6
Magnesium	4800	5200	8
Manganese	210	210	0
Nickel	11	14	24
Potassium	2300	2400	4
Sodium	290	310	7
Vanadium	28	29	4
Zinc	33	37	11

### XIV. Field Blanks

Sample 18609-708 was identified as a rinsate. No metal or cyanide contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
18609-708	Barium Cadmium Calcium Copper Iron Magnesium Manganese Sodium Zinc	1.3 2.3 330 5 35 100 1.2 930 19

MCAS EI Toro  
 Metals & Cyanide - Data Qualification Summary - SDG G9710422

SDG	Sample	Analyte	Flag	A or P	Reason
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-704 18609-705 18609-708	Cyanide	None	P	Calibration
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-704 18609-705 18609-708	Selenium  Antimony	J (all detects) R (all non-detects) J (all detects) R (all non-detects)	A	Matrix spike analysis (%R) (RPD)
G9710422	18609-690 18609-688 18609-692 18609-693 18609-696 18609-702 18609-700** 18609-698 18609-704 18609-705 18609-708	Mercury Arsenic Aluminum Iron Magnesium	J J J (all detects) J (all detects) J (all detects)	A	Matrix spike analysis (%R) (RPD)

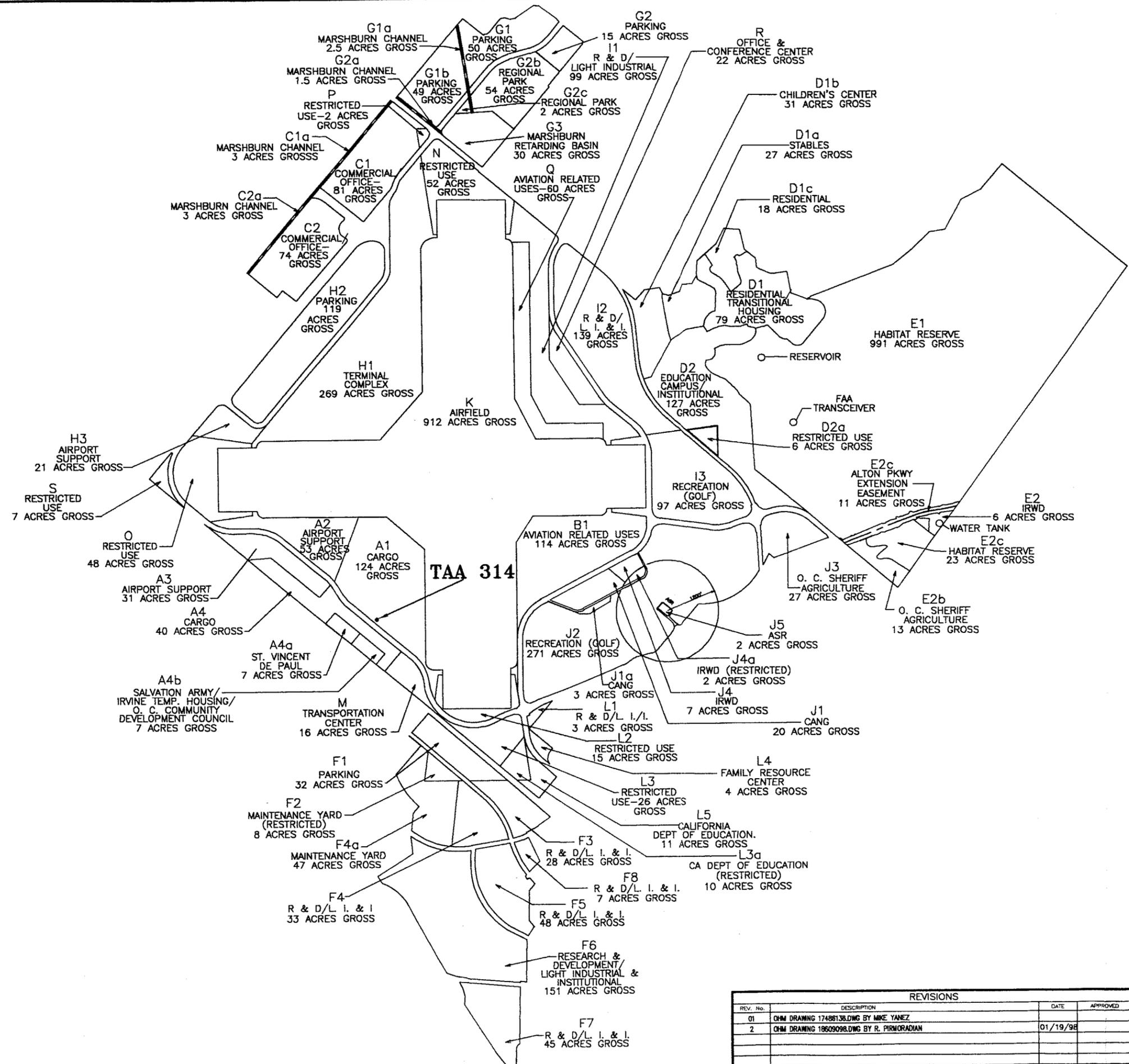
MCAS EI Toro  
 Metals & Cyanide - Laboratory Blank Data Qualification Summary - SDG G9710422

No Sample Data Qualified in this SDG

*Appendix J*

*Tentative Reuse Parcel Location of TAA 314*

ec 18, 1998 -- 18:41:38 G:\PROJECTS\18609\18609167.dwg



TAA 314



REVISIONS			
REV. No.	DESCRIPTION	DATE	APPROVED
01	OHM DRAWING 17486136.DWG BY MIKE YANEZ		
2	OHM DRAWING 18609098.DWG BY R. PIRMORADIAN	01/19/98	

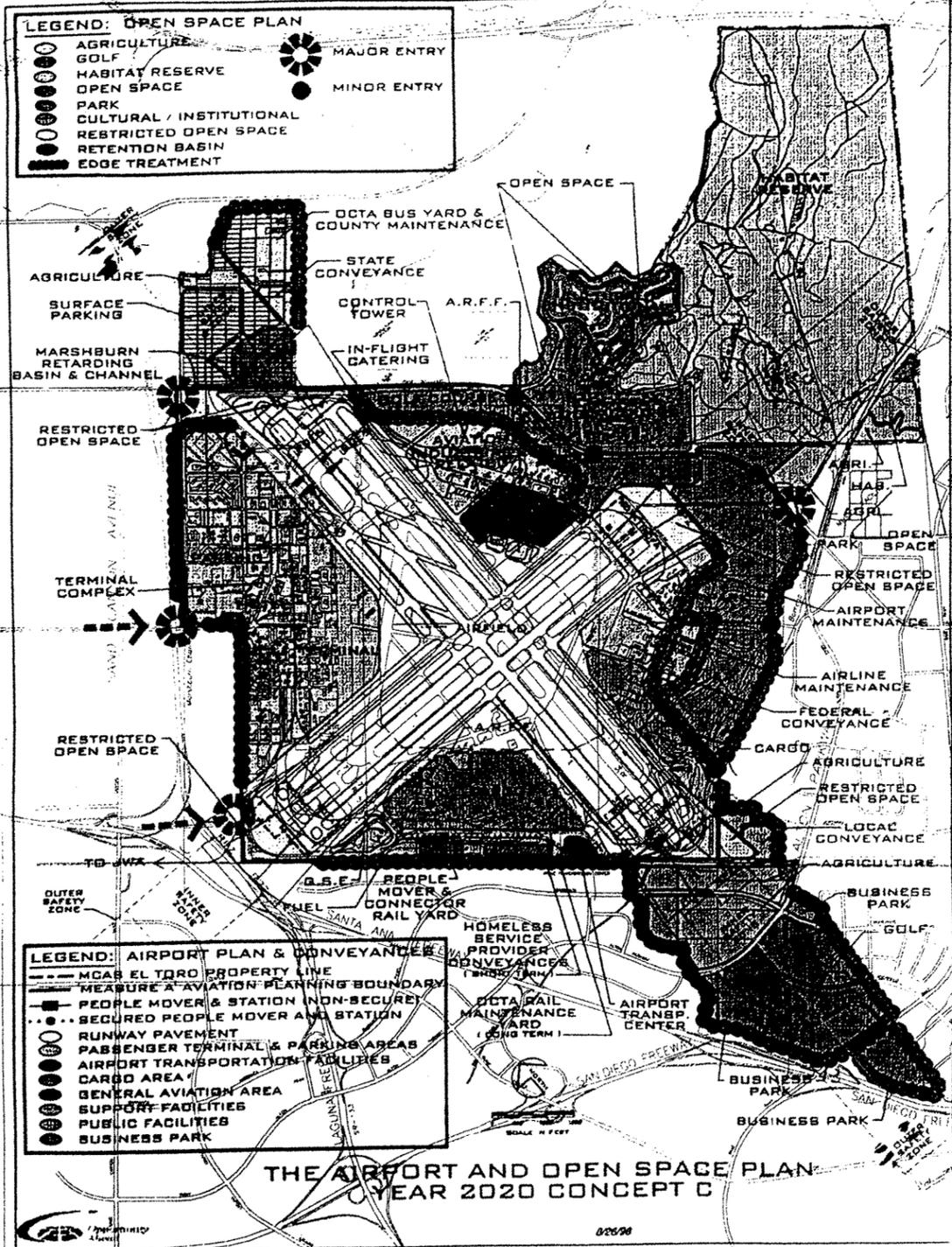
PROJECT <b>SWDIV</b>		OHM Remediation Services Corp. A Subsidiary of OHM Corporation SAN DIEGO, CA	
DRAWN BY R. PIRMORADIAN	DATE 12/18/98	EL TORO COMMUNITY REUSE PLAN 1997 WORKING MAP LAND USES/ CONVEYANCES GROSS ACRES TAA 314	
CHECKED BY	DATE	MARINE CORPS AIR STATION EL TORO, CALIFORNIA	
APPROVED BY	DATE		
PROJECT MANAGER	DATE		
AUTOCAD FILE No. 18609167.DWG		SCALE 1"=2,400'	DRAWING No. FIG A-1
SHEET 1	OF 1	DOCUMENT CONTROL No. SW5979	OHM PROJECT No. 18609

**LEGEND: OPEN SPACE PLAN**

- AGRICULTURE
- GOLF
- HABITAT RESERVE
- OPEN SPACE
- PARK
- CULTURAL / INSTITUTIONAL
- RESTRICTED OPEN SPACE
- RETENTION BASIN
- EDGE TREATMENT
- ☼ MAJOR ENTRY
- MINOR ENTRY

**LEGEND: AIRPORT PLAN & CONVEYANCES**

- MCAS EL TORO PROPERTY LINE
- MEASURE A AVIATION PLANNING BOUNDARY
- PEOPLE MOVER & STATION (NON-SECURE)
- SECURED PEOPLE MOVER AND STATION
- RUNWAY PAVEMENT
- PASSENGER TERMINAL & PARKING AREAS
- AIRPORT TRANSPORTATION FACILITIES
- CARGO AREA
- GENERAL AVIATION AREA
- SUPPORT FACILITIES
- PUBLIC FACILITIES
- BUSINESS PARK



THE AIRPORT AND OPEN SPACE PLAN  
YEAR 2020 CONCEPT C