OHM Remediation Services Corp.
A Member of The IT Group

February 12, 1999

Ms. Bozier H. Demaree, Code 02R.BD
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5187

Attention: Ms. Lynn Hornecker

Subject: Transmittal of Technical Memorandum: Groundwater Data Summary, Former Petroleum Storage Facilities at Tank Farm 2 and Tank 398, dated January 25, 1999
Contract N68711-93-D-1459, Delivery Order 112,
Remediation of Various Underground Storage Tank Sites at MCAS El Toro, California

Dear Ms. Hornecker:

OHM is pleased to provide the attached Technical Memorandum for your files and use. I have included the transmittal letter from Joseph Joyce to the Regional Water Quality Control Board.

Two copies of this report have also been submitted to the Admin Record for El Toro, as requested.

If you have any questions or need additional copies of the document please call me.

Sincerely,

William Sedlak
Sr. Project Manager

cc: L. Holloway, SWDIV, COTR (1C/1E)
Admin Record (1C/2E)
OHM PMO File (1C/1E)
Project File, B.01.018

UNITED STATES MARINE CORPS
HEADQUARTERS MARINE CORPS AIR STATION EL TORO
PO BOX 95000
SANTA ANA CA 92709-5000

IN REPLY REFER TO:
6284
1AU
JAN 27 1999

California Regional Water Quality Control Board
Santa Ana Region
Attn: Ms. Patricia Hannon
3737 Main Street, Suite 900
Riverside, CA 92501-3339

Dear Ms. Hannon:

Provided for your information as enclosure (1) is one (1) copy of the "Technical Memorandum, Groundwater Data Summary, Former Petroleum Storage Facilities at Tank Farm 2 and the Tank 398 Site, Marine Corps Air Station El Toro, California" dated January 1999. The report presents the information collected during the December 1998 sampling activities.

If you have any question, please call me at (949) 726-3470.

Sincerely,

Joseph Joyce

JOSEPH JOYCE
Base Realignment and Closure
Environmental Coordinator
By direction of
the Commanding Officer

Encl:
(1) Technical Memorandum (SWDIV, January 1999)

002387

Technical Memorandum

Groundwater Data Summary
Former Petroleum Storage Facilities
at Tank Farm 2 and the Tank 398 Site
Marine Corps Air Station, El Toro, California

25 January 1999

Prepared by
Southwest Division, Naval Facilities Engineering Command
BRAC Operations Office
1420 Kettner Boulevard, San Diego, CA 92101

TABLE OF CONTENTS

Section		*Page*
1	**Introduction**	1
2	**Groundwater Sampling Activities**	2
3	**References and/or Sources of Information**	9

Figures

Figure 1. Vicinity Map
Figure 2. Tentative Reuse Parcel Locations
Figure 3. Tank Farm 2
Figure 4. Tank 398 Site

Appendix

Laboratory Test Reports and Chain of Custody Documentation

Section 1
Introduction

The purpose of this technical memorandum is to present the results of groundwater sampling activities conducted during the month of December 1998 at the former petroleum storage facilities at Tank Farm 2 and the Tank 398 Site at the Marine Corps Air Station (MCAS), El Toro, California (the Station). The locations of the facilities are shown on Figure 1. Groundwater sampling was conducted by OHM Remediation Services Corporation (OHM) under Navy Contract N68711-93-D-1459, Delivery Order 112. Groundwater samples were analyzed by one or more of the following methods: United States Environmental Protection Agency (EPA) Method 8015-modified (Total Petroleum Hydrocarbons); EPA Method 8020 (Benzene, Toluene, Ethylbenzene, Xylenes (BTEX compounds), and Methyl Tertiary Butyl Ether (MTBE)); EPA Method 8260 (Volatile Organic Compounds (VOCs) including BTEX compounds and MTBE).

The Marine Corps Air Station, El Toro, also known as the Station, comprises approximately 4,700 acres and is located in eastern Orange County approximately 45 miles southeast of Los Angeles, California. The Station is preparing for closure in July 1999 in accordance with the Base Closure and Realignment Act of 1993 (BRAC III). The former Tank Farm 2 and Tank 398 Site facilities are located within parcels that have been tentatively identified as terminal complex areas and aviation/industrial areas, respectively, on *The Airport and Open Space Plan, Year 2020 Concept C* as published by the County of Orange (the local redevelopment authority) in August 1998. [The former Tank Farm 2 and Tank 398 Site facilities are located within parcels that were identified as the terminal complex and aviation-related uses, respectively, in the El Toro Community Reuse Plan, 1997 Working Map (County of Orange, 1997).] The Year 2020 Concept C plan is shown in Figure 2.

Section 2
Groundwater Sampling Activities

Groundwater samples were collected from three (3) wells at Tank Farm 2 and from five (5) wells at the Tank 398 Site in December 1998. Samples were analyzed by Applied Physical and Chemical Laboratory (APCL). Selected groundwater analyses from previously completed sampling activities (published in the *Technical Memorandum, Groundwater Data Summary, Petroleum Storage Facilities at Various Locations, Marine Corps Air Station, El Toro, California* (Southwest Division, Naval Facilities Engineering Command, 1998)) are presented for comparison.

Tank Farm 2

Tank Farm 2 is located in the western section of the Station near West Marine Way and South 6th Street. All tanks were removed from the tank farm in 1995 with oversight by OCHCA. Information pertaining to the tanks at Tank Farm 2 is presented in Table 1, and groundwater monitoring well locations are shown on Figure 3.

Table 1. Tank Farm 2.

Tank Identification Number	Tank Size (gallons)	Regulatory Closure Date	Regulatory Oversight Agency
176	25,000	Request for closure submitted on 16 April 1998 – Regulatory review is in progress	RWQCB
177	50,000	"	"
178	50,000	"	"
179	25,000	"	"
180	25,000	"	"
181	50,000	"	"
182	50,000	"	"
183	25,000	"	"
T-5	2,000	19 November 1997	RWQCB

Additional information pertaining to Tank Farm 2 is presented in the *Site Assessment and Remedial Action Report, Tank Farm 2, Marine Corps Air Station, El Toro, California* (OHM, 1998).

Groundwater samples were collected from wells **TF2-MW01** (located at the northeast side of Tank Farm 2), **TF2-MW03** (located adjacent to and northwest of Tank Farm 2), and **TF2-MW04** (located in the center of Tank Farm 2) in December 1998. The results for various analytes for the December 1998 sampling round and for selected previous sampling rounds are presented on the following charts.

MTBE was not detected at or above laboratory reporting limits in samples collected from Tank Farm 2. Laboratory reports and chain of custody documentation are presented in the Appendix.

Chart 1. Benzene Concentrations in micrograms per liter (ug/L) at Well TF2-MW01 Tank Farm 2

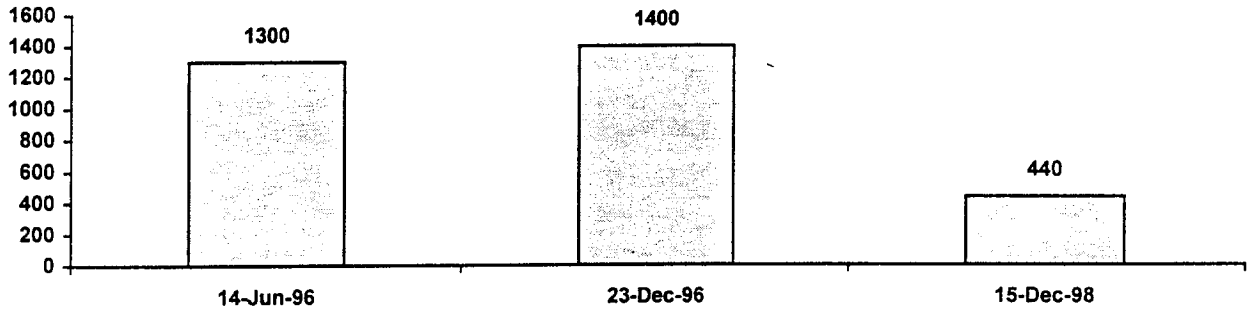


Chart 2. Benzene Concentrations in micrograms per liter (ug/L) at Well TF2-MW03 Tank Farm 2

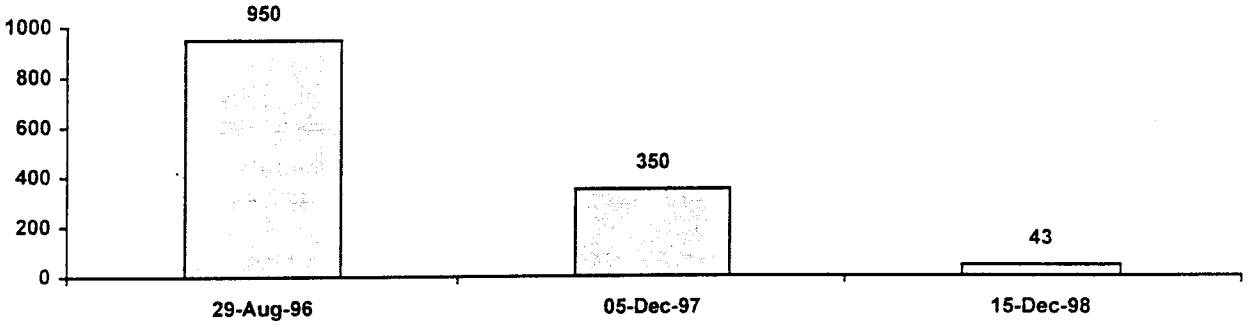


Chart 3. Benzene Concentrations in micrograms per liter (ug/L) at Well TF2-MW04, Tank Farm 2

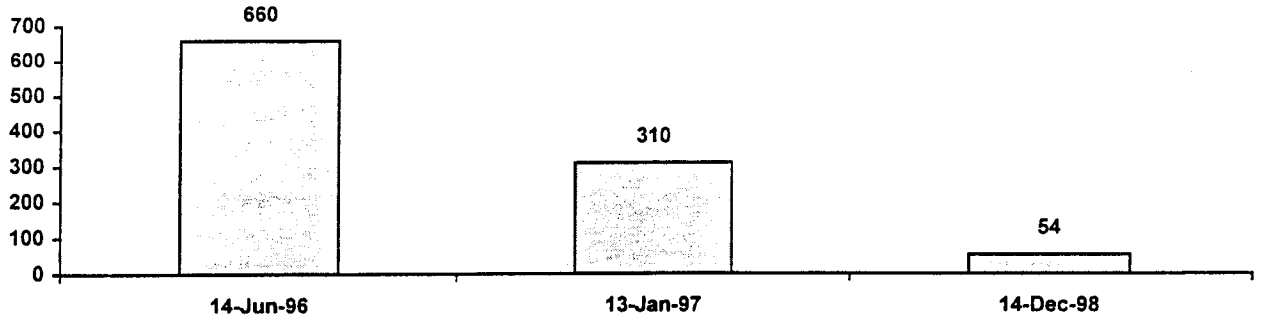
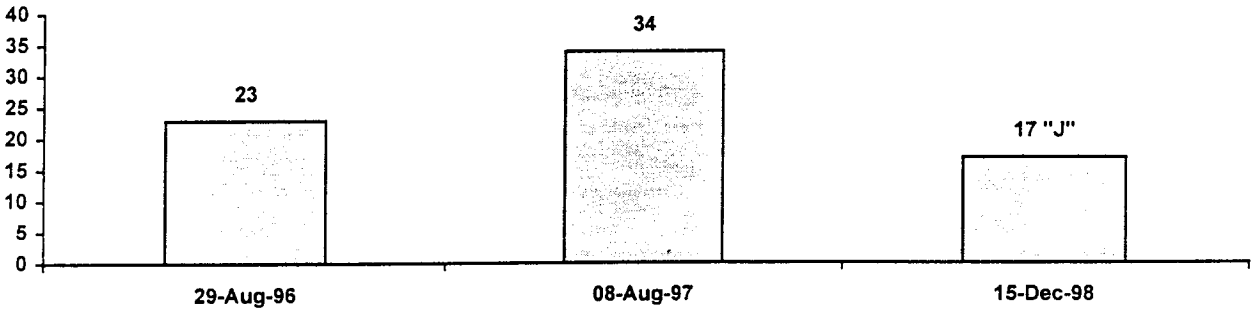
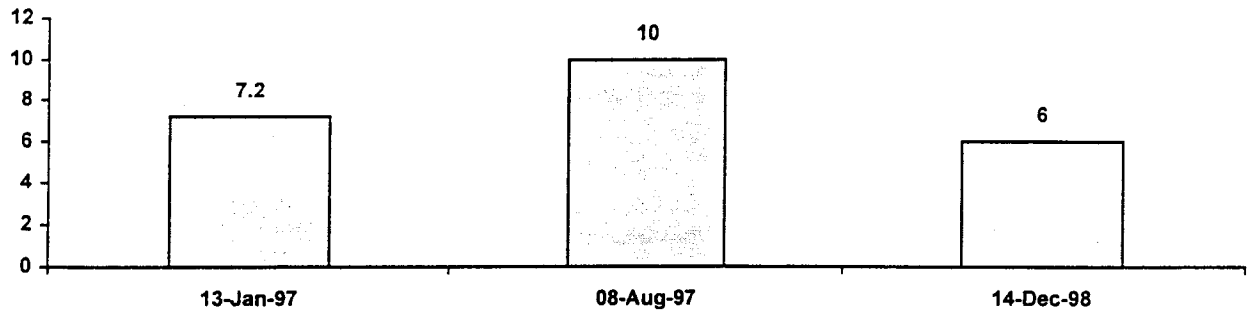


Chart 4. 1,2-Dichloroethane Concentrations in micrograms per liter (ug/L) at Well TF2-MW01, Tank Farm 2



Note: "J" qualifier indicates that the concentration is between the Practical Quantitation Limit and the Method Detection Limit.

Chart 5. 1,2-Dichloroethane Concentrations in micrograms per liter (ug/L) at Well TF2-MW04, Tank Farm 2



Tank 398 Site

The Tank 398 Site is located in the northeastern section of the Station near North 6th Street and Q Street. The 108,000-gallon jet fuel (JP-5) tank was removed several years ago. Releases of JP-5 to the vadose zone and groundwater are being remediated.

Groundwater samples were collected from five wells during December 1998: **MW398-05** (northwest of the free product plume); **MW398-06** (north of and adjacent to the central part of the free product plume); **MW398-13** (northwest of the free product plume); **MW398-17** (northwest of the free product plume); and **MW398-20** (southeast of the free product plume). MTBE was reported as an estimated value of 2.5 ug/L in the sample collected from MW398-17. MTBE was not reported at or above the reporting limits in other samples.

Groundwater monitoring well locations are shown on Figure 4. The results for benzene analyses for the December 1998 and selected previous sampling rounds are presented on the following charts.

Chart 6. Benzene Concentrations in micrograms per liter (ug/L) at Well MW398-05, Tank 398 Site

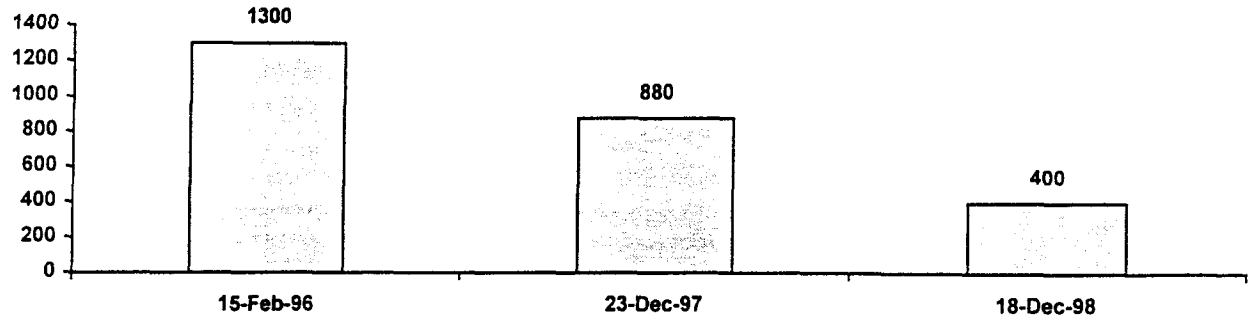
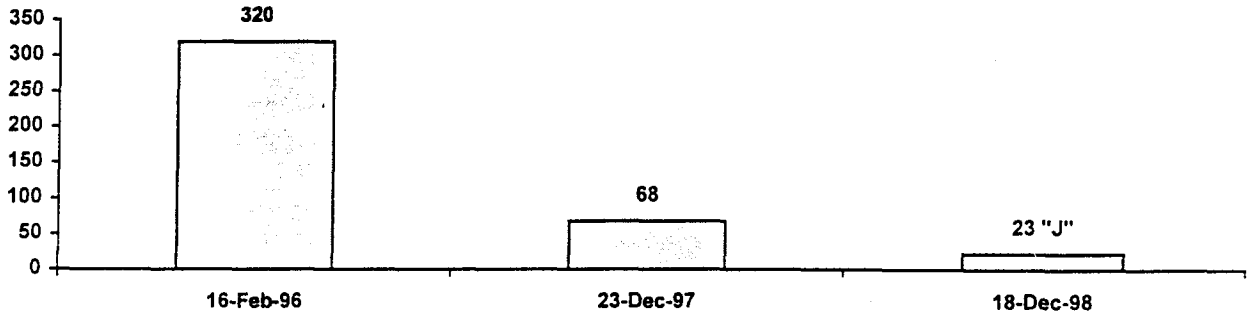
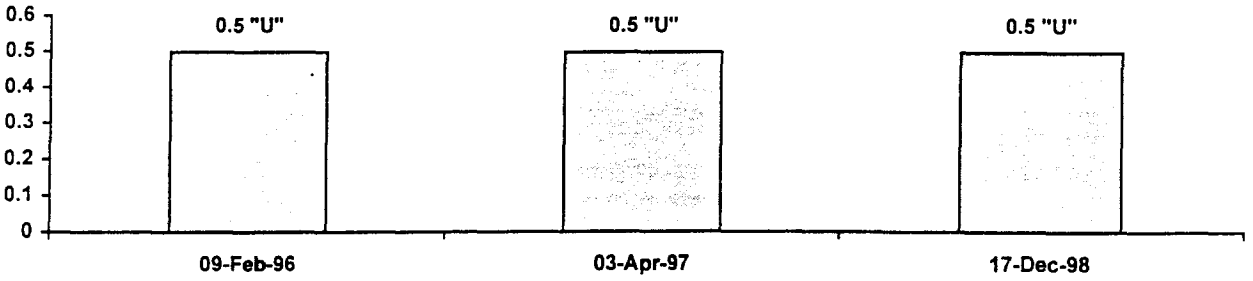


Chart 7. Benzene Concentrations in micrograms per liter (ug/L) at Well MW398-06, Tank 398 Site



Note: "J" qualifier indicates that the concentration is between the Practical Quantitation Limit and the Method Detection Limit.

Chart 8. Benzene Concentrations in micrograms per liter (ug/L) at Well MW398-13, Tank 398 Site



Note: "U" qualifier indicates that the analyte was not detected at or above the stated reporting limit.

Chart 9. Benzene Concentrations in micrograms per liter (ug/L) at Well MW398-17, Tank 398 Site

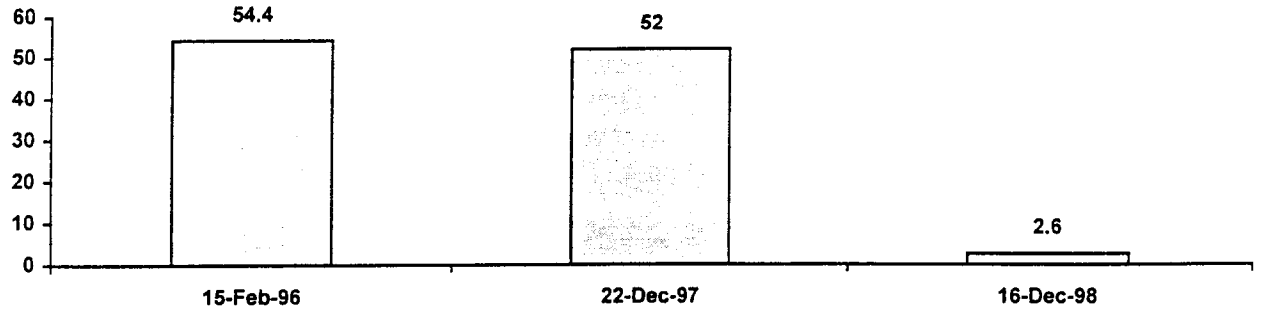
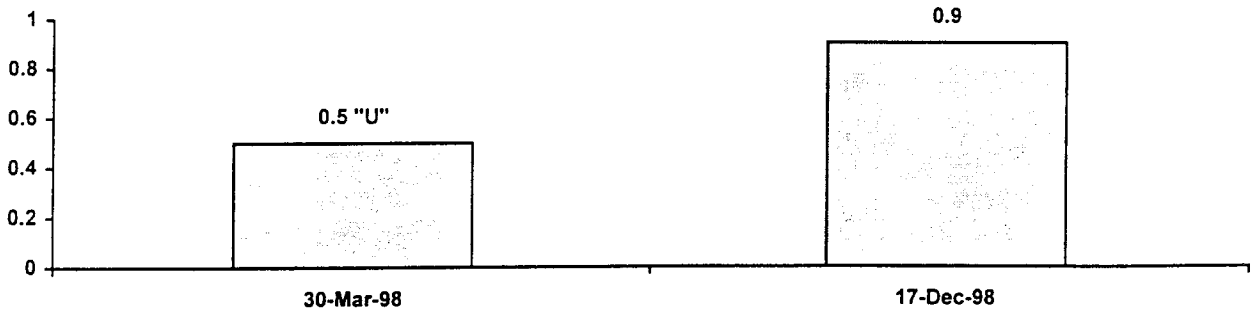


Chart 10. Benzene Concentrations in micrograms per liter (ug/L) at Well MW398-20, Tank 398 Site



Note: "U" qualifier indicates that the analyte was not detected at or above the stated reporting limit.

Releases of jet fuel in the vadose zone are being remediated by soil vapor extraction (SVE) treatment. Vapor samples were analyzed by EPA Methods TO-3 (Total Volatile Petroleum Hydrocarbons, Benzene, Toluene, Ethylbenzene, Xylenes, and Methyl Tertiary Butyl Ether (MTBE)). During December 1998, the influent vapor concentration of petroleum hydrocarbons was 1,300 parts per million by volume (ppmv) characterized as gasoline. The hydrocarbon range of the influent petroleum hydrocarbons follows:

Hydrocarbon Range	Influent Vapor Concentration (16 December 1998)
C_5	1.1 ppmv
C_6	5.1 ppmv
C_7	59 ppmv
C_8	250 ppmv
C_9	300 ppmv
C_{10+}	650 ppmv

For comparison, the influent vapor concentrations, measured in September 1996, were in the range of 1,000 to 2,900 ppmv and the hydrocarbon range of the influent petroleum hydrocarbons follows:

Hydrocarbon Range	Influent Vapor Concentration (September 1996)
C_{5-6}	170 ppmv
C_7	620 ppmv
C_8	550 ppmv
C_9	230 ppmv
C_{10+}	430 ppmv

Benzene and MTBE were not detected at or above laboratory reporting limits in the influent vapor sample collected in December 1998.

Free product (JP-5) is bailed from several groundwater wells on a routine basis with an average recovery rate of less than 50 gallons per month.

Section 3
References and/or Sources of Information

County of Orange. 1997. Alternative A, El Toro Community Reuse Plan, 1997 Working Map, Land Uses/Conveyances, Gross Acres. [Prepared by P&D Consultants for the County of Orange, March 1997.]

County of Orange. 1998. The Airport and Open Space Plan, Year 2020 Concept C. August.

OHM Remediation Services Corporation (OHM). 1997. Technical Memorandum, Groundwater Monitoring Report, Petroleum Storage Facilities at Various Locations, Marine Corps Air Station, El Toro, California. November. [Navy Contract N68711-93-D-1459, Delivery Order 50]

OHM Remediation Services Corporation (OHM). 1998. Site Assessment and Remedial Action Report, Tank Farm 2, Marine Corps Air Station, El Toro, California. April.

OHM Remediation Services Corporation (OHM). 1999. Technical Information Package for Groundwater Monitoring Program. [Navy Contract N68711-93-D-1459, Delivery Order 112]

Southwest Division, Naval Facilities Engineering Command. 1998. Technical Memorandum, Groundwater Data Summary, Petroleum Storage Facilities at Various Locations, Marine Corps Air Station, El Toro. September.

Southwest Division, Naval Facilities Engineering Command. 1998. Facsimile to Patricia Hannon. Subject: Interim Progress Report, Free Product Removal and Soil Vapor Extraction Treatment at the Tank 398 Site, Marine Corps Air Station, El Toro.

Figures

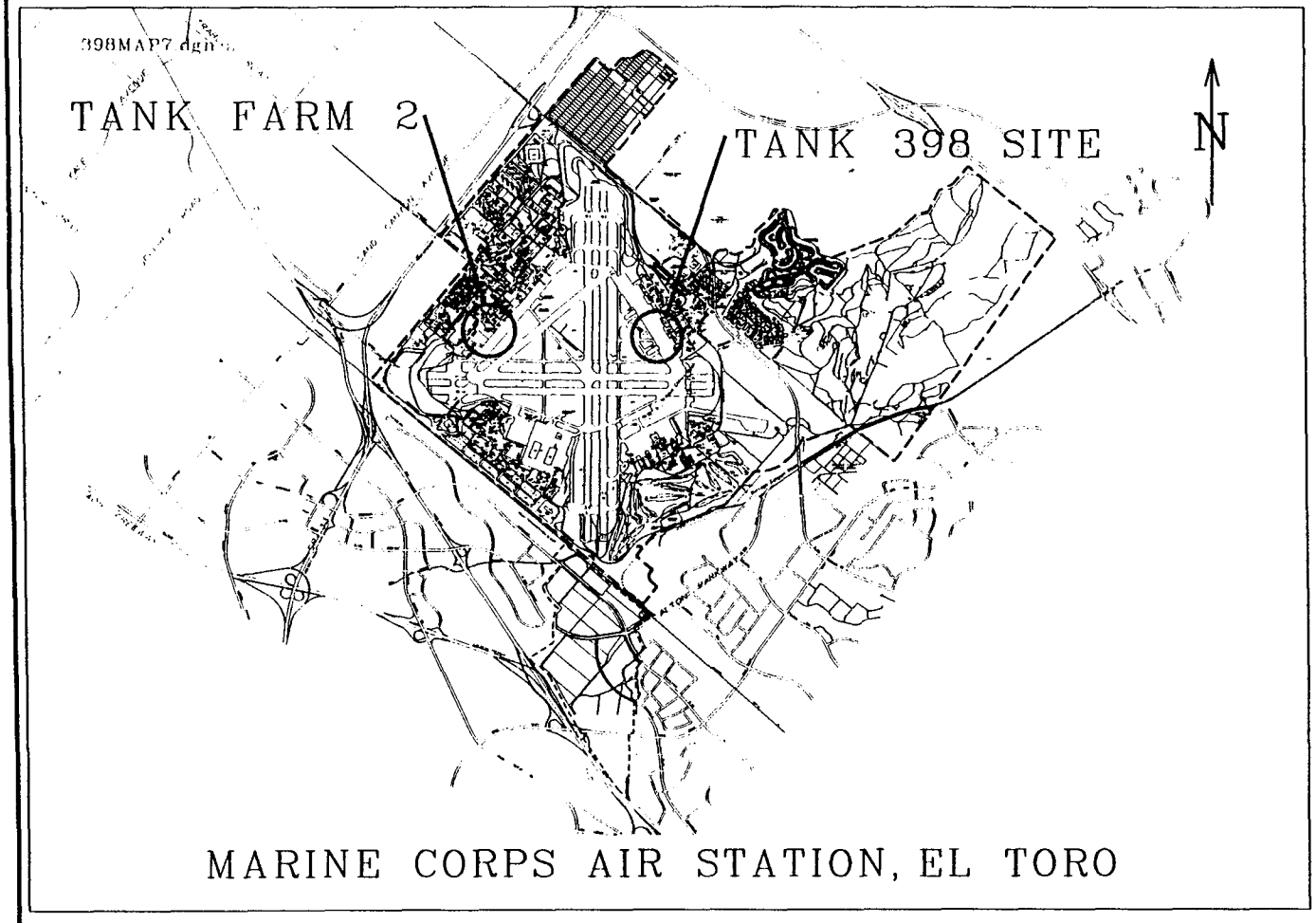
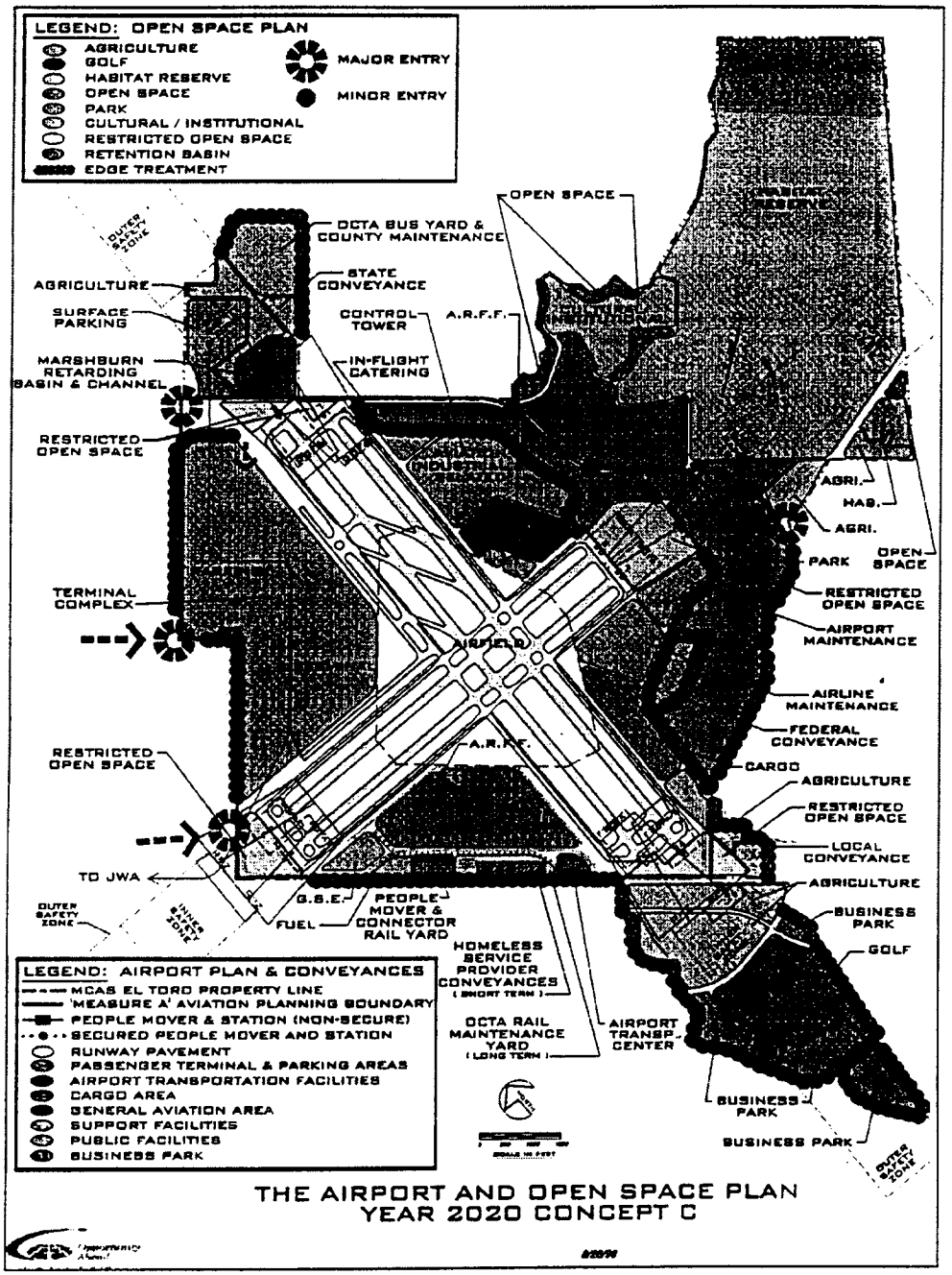


Figure 1.

GROUNDWATER DATA SUMMARY

VICINITY MAP

MARINE CORPS AIR STATION, EL TORO



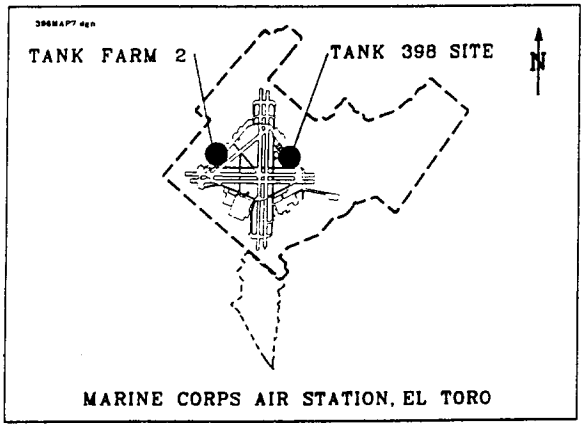


Figure 2.

GROUNDWATER DATA SUMMARY

TENTATIVE REUSE PARCEL LOCATIONS

MARINE CORPS AIR STATION, EL TORO

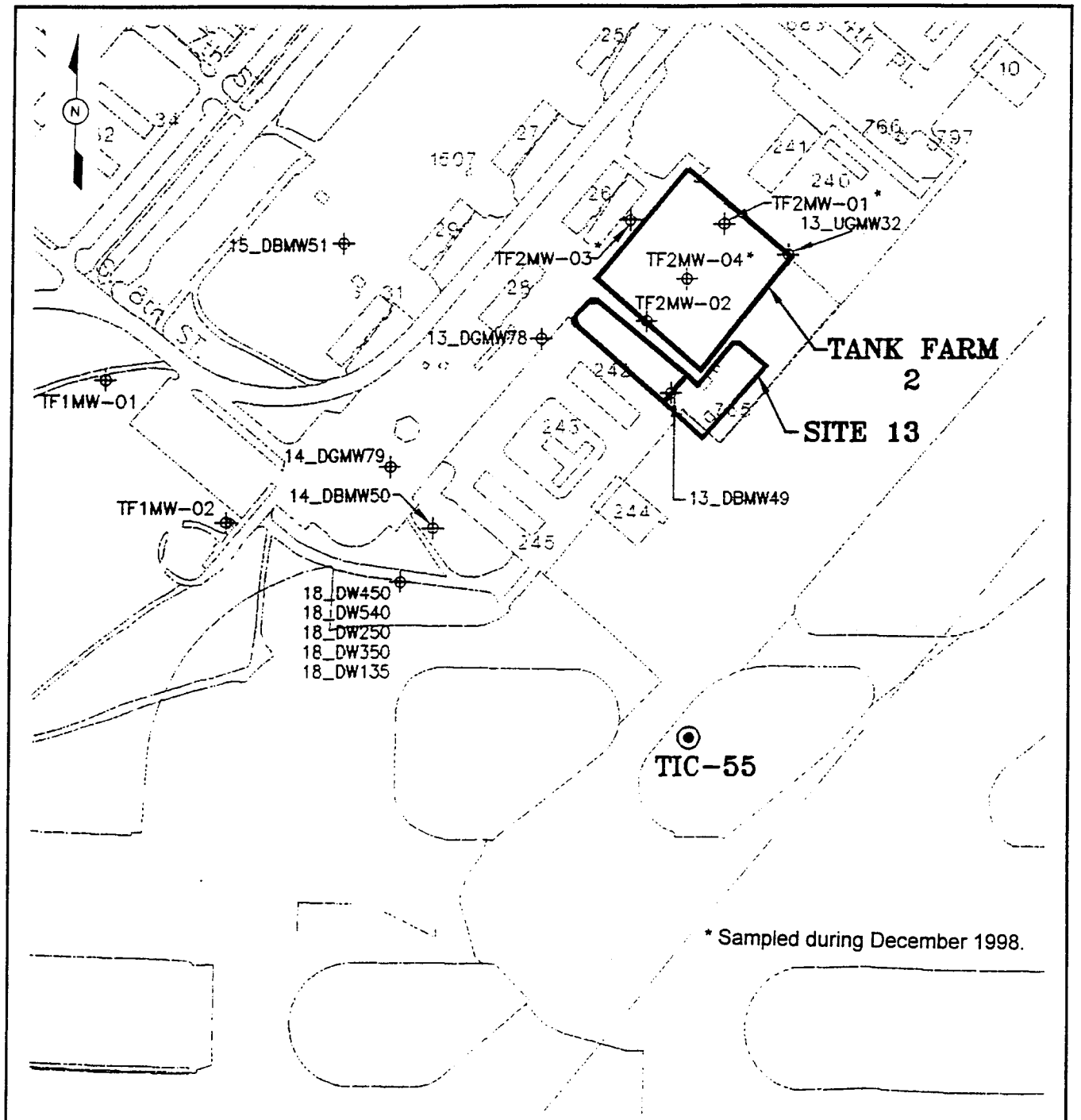


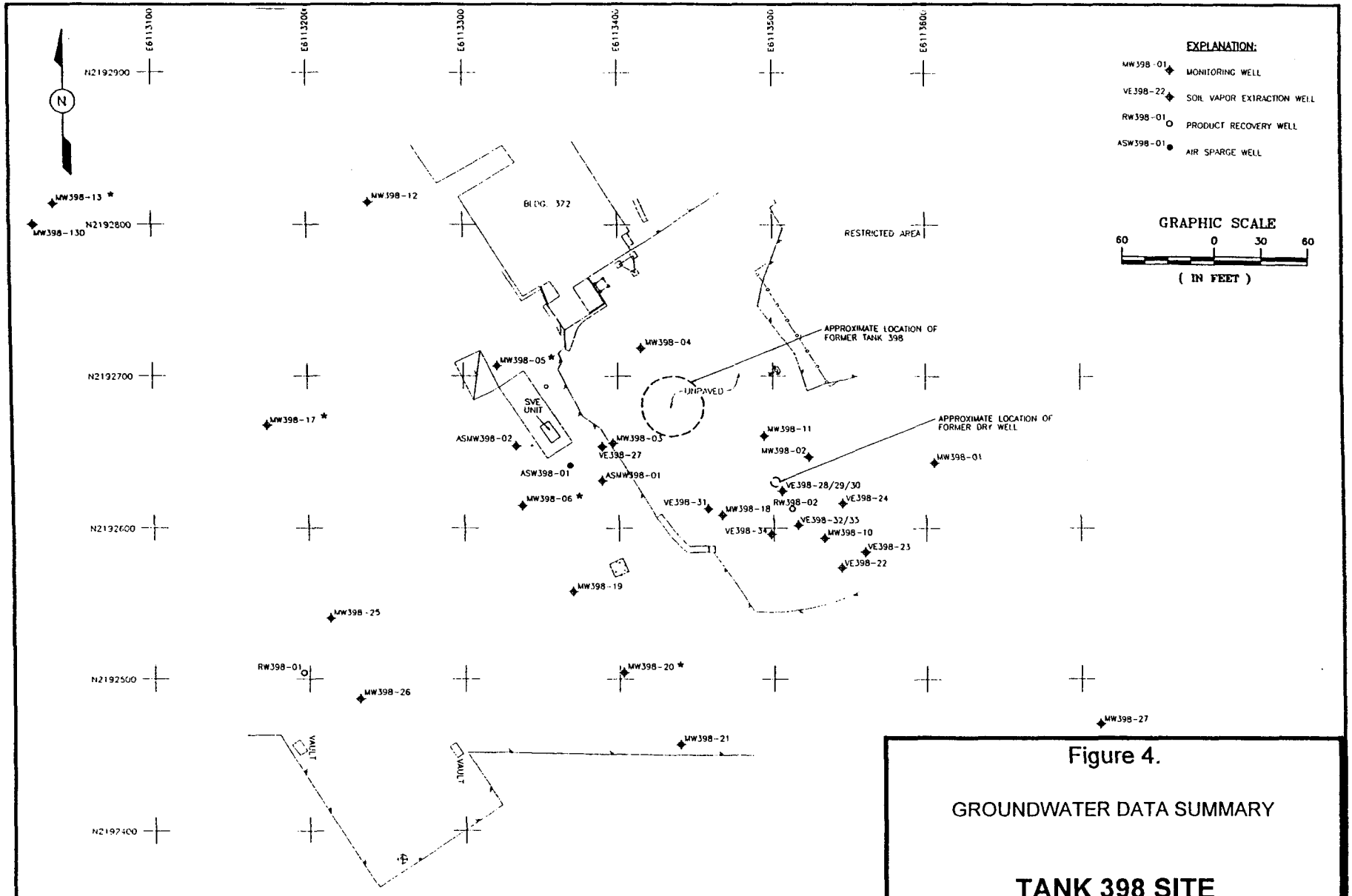
Figure 3.

GROUNDWATER DATA SUMMARY

TANK FARM 2

MARINE CORPS AIR STATION, EL TORO

Source of Map Information: OHM, 1998.



Source of Map Information: OHM, 1999.

* Sampled during December 1998.

Figure 4.

GROUNDWATER DATA SUMMARY

TANK 398 SITE

MARINE CORPS AIR STATION, EL TORO

Appendix

Table A1.

Tank Farm 2 Groundwater Data Summary, December 1998 Sampling Activities
Marine Corps Air Station, El Toro

Well Identification Number	Screened Interval (Feet Below Ground Surface)	Total Petroleum Hydrocarbons (TPH) by EPA Method 8015-Modified (milligrams per liter)	Benzene (B), Toluene (T), Ethylbenzene (E), Xylenes (X), MTBE, and 1,2-DCA By EPA Method 8260 (all concentrations in micrograms/liter)
TF2MW-01 Sample 20242-648 **(15 Dec 98)**	120-160	*Dilution Factor: 1* TPH-gasoline: 2.52 TPH-diesel: < 0.5 TPH-motor oil: < 0.5	*Dilution Factor: 10* **B: 440** T: <50 E: <50 X: 110 "J" MTBE: <100 1,2-DCA: 17 "J"
TF2MW-03 Sample 20242-646 **(15 Dec 98)**	120-160	*Dilution Factor: 1* TPH-gasoline: 1.02 TPH-diesel: < 0.5 TPH-motor oil: < 0.5	*Dilution Factor: 1* **B: 43** T: <5 E: <5 X: 31 MTBE: <10 1,2-DCA: 2 "J"
TF2MW-04 Sample 20242-642 **(14 Dec 98)**	120-160	*Dilution Factor: 1* TPH-gasoline: 0.87 TPH-diesel: < 0.5 TPH-motor oil: < 0.5	*Dilution Factor: 1* **B: 54** T: <5 E: <5 X: 56 MTBE: <10 1,2-DCA: 6

Notes:
"J" Reported between Practical Quantitation Limit (PQL) and Method Detection Limit (MDL).
"<" Reported value is the PQL.

Table A2.

Tank 398 Site Groundwater Data Summary, December 1998 Sampling Activities
Marine Corps Air Station, El Toro

Well Identification Number	Screened Interval (Feet Below Ground Surface)	Total Petroleum Hydrocarbons (TPH) by EPA Method 8015-Modified (micrograms/liter)	Benzene (B), Toluene (T), Ethylbenzene (E), Xylenes (X), and MTBE By EPA Method 8020 (all concentrations in micrograms/liter)
MW398-05 Sample 20242-665 **(18 Dec 98)**	197-227	*Dilution Factor: 5* TPH-gasoline: 5 *Dilution Factor: 1* TPH-diesel: <0.5 TPH-JP5: 2.2 TPH-motor oil: <0.5	*Dilution Factor: 10* **B: 400** T: <50 E: 400 X: <150 MTBE: <100
MW398-06 Sample 20242-661 **(18 Dec 98)**	196-228	*Dilution Factor: 1* TPH-gasoline: 1.55 TPH-diesel: <0.5 TPH-JP5: 0.8 TPH-motor oil: <0.5	*Dilution Factor: 10* **B: 23 "J"** T: <50 E: 150 X: <150 MTBE: <100
MW398-13 Sample 20242-657 **(17 Dec 98)**	193-243	*Dilution Factor: 1* TPH-gasoline: <0.05 TPH-diesel: <0.5 TPH-motor oil: <0.5	*Dilution Factor: 1* **B: <0.5** T: <0.5 E: <0.5 X: <1 MTBE: <5
MW398-17 Sample 20242-654 **(16 Dec 98)**	189-239	*Dilution Factor: 1* TPH-gasoline: 0.66 TPH-diesel: 0.6 "a" TPH-motor oil: <0.5	*Dilution Factor: 1* **B: 2.6** T: 0.3 "J" E: 4.4 X: 2.1 MTBE: 2.5 "J"
MW398-20 Sample 20242-659 **(17 Dec 98)**	201-251	*Dilution Factor: 1* TPH-gasoline: 0.1 TPH-diesel: 0.1 "J" TPH-motor oil: <0.5	*Dilution Factor: 1* **B: 0.9** T: <0.5 E: 1.0 X: 0.3 "J" MTBE: <5

Notes:
"J" Reported between Practical Quantitation Limit (PQL) and Method Detection Limit (MDL).
"<" Reported value is the PQL.
"a" Similar to Jet Fuel.

SOUTHWESTNAVFACENGCOM
CODE 56MC.LMH
SAN DIEGO, CA 92101

Tank Farm 2
Groundwater Data
(December 1998)

OHM Remediation
Services Corp.
A Subsidiary of OHM Corporation

January 14, 1999

Ms. Bozier H. Demaree, Code 02R.BD
Naval Facilities Engineering Command
Southwest Division
1220 Pacific Highway
San Diego, CA 92132-5187

Attention: Ms. Lynn Hornecker

Subject: Transmittal of Analytical Data for December Groundwater Monitoring Event and Tank 398 SVE System Monitoring in December 1998 Contract N68711-93-D-1459, Delivery Order 112, Remediation of Various Underground Storage Tank Sites at MCAS El Toro, California

Dear Ms. Hornecker:

OHM is pleased to submit the attached data for the monitoring of the groundwater and Tank 398 SVE system for December 1998.

If you have any questions or need additional copies of the document please call me.

Sincerely,

William Sedlak
Sr. Project Manager

cc: L. Holloway, SWDIV, COTR
OHM PMO File
Project File, B.01

2031 Main Street ■ Irvine, California 92614-6509 ■ 714-263-1146 ■ FAX: 714-263-1147

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
217261
FORM 0019 REV. 2-97

LAB COORDINATOR: Zar Tintul Williams	LAB COORDINATOR'S PHONE: (949) 263-1141	LAB COORDINATOR'S FAX: (949) 263-1147	LABORATORY SERVICE ID:	LABORATORY CONTACT: Jim Lind	MAIL REPORT (COMPANY NAME): OHM Remediation
NAME: Samples	PROJECT LOCATION: MCAS EL TORO	PROJECT NUMBER:	LABORATORY PHONE: (909) 590-1828	LABORATORY FAX:	RECIPIENT NAME: Wayne Ishida
CONTACT: Zar Tintul Williams	PROJECT PHONE NUMBER: (949) 263-1146	PROJECT FAX: (949) 263-1147	LABORATORY ADDRESS: AFCL		ADDRESS: 2031 Main Street
ADDRESS: MCAS EL TORO	CITY, STATE AND ZIPCODE: Santa Ana, CA	CLIENT: Lynn Hornecker Sub Div.	CITY, STATE AND ZIPCODE: Chino, CA		CITY, STATE, AND ZIPCODE: Irvine, CA
MANAGER: L. SEDLAK	PROJECT MANAGER'S PHONE: (949) 263-1146	PROJECT MANAGER'S FAX: (949) 263-1147			

Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 8260 + NYSC	TPH-Purgeable	TPH-Extractable						Comments
20242-640	water	12/14/98	700	4°/HCl	2	III	5-DAY	X	X							
20242-641	water	12-14-98	840	see label	5	III	5-Day	X	X	X						
20242-642	water	12-14-98	1150	see label	5	III	5-Day	X	X	X						
20242-643	water	12-14-98	1300	see lable	5	III	5-Day	X	X	X						
20242-644	water	12-14-98	1410	see Label	5	III	5-Day	X	X	X						

ES COLLECTED BY: Adrian Siddiqui	COURIER AND AIR BILL NUMBER:			COOLER TEMPERATURE UPON RECEIPT:
RELINQUISHED BY: Adrian Siddiqui	RECEIVED BY: Dennis Valera	DATE: 12-14-98	TIME:	SAMPLE'S CONDITION UPON RECEIPT:

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	QC
(1) TRIP BLANK	X			X
(2) EQUIPMENT RINSATE	X		X	X
(3) TF2MW-04 @ 150'	X		X	
(4) Source Blank Lot# 8335 SAP	X		X	X
(5) EQUIPMENT RINSATE	X		X	X

Comments

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

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
OHM Remediation Services (Irvine)
Attention: Dwayne Ishida
2031 Main St.
Irvine CA 92714
Tel: (714)263-1146 Fax: (714)263-1147

Service ID #: 801-986917
Collected by: Adnan Siddiqui
Collected on: 12/14/98

Received: 12/14/98
Extracted: 12/16/98
Tested: 12/16-18/98
Reported: 12/23/98

Sample Description: Groundwater
Project Description: 20242 MCAS El Toro

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-640 98-06917-1	20242-641 98-06917-2
Dilution Factor				1	1
GASOLINE	M8015V	mg/L	0.05	<0.05	<0.05
Dilution Factor				1	1
TPH AS DIESEL	M8015E	mg/L	0.5	-	<0.5
Dilution Factor				1	1
TPH AS MOTOR OIL	M8015E	mg/L	0.5	-	0.1J
VOLATILE ORGANICS					
Dilution Factor				1	1
BENZENE	8260	µg/L	5	<5	<5
BROMOBENZENE	8260	µg/L	5	<5	<5
BROMOCHLOROMETHANE	8260	µg/L	5	<5	<5
BROMODICHLOROMETHANE	8260	µg/L	5	<5	<5
BROMOFORM	8260	µg/L	5	<5	<5
BROMOMETHANE	8260	µg/L	5	<5	<5
N-BUTYLBENZENE	8260	µg/L	5	<5	<5
SEC-BUTYLBENZENE	8260	µg/L	5	<5	<5
TERT-BUTYLBENZENE	8260	µg/L	5	<5	<5
CARBON TETRACHLORIDE	8260	µg/L	5	<5	<5
CHLOROBENZENE	8260	µg/L	5	<5	<5
DIBROMOCHLOROMETHANE	8260	µg/L	5	<5	<5
CHLOROETHANE	8260	µg/L	5	<5	<5
CHLOROFORM	8260	µg/L	5	<5	<5
CHLOROMETHANE	8260	µg/L	5	<5	<5
2-CHLOROTOLUENE	8260	µg/L	5	<5	<5
4-CHLOROTOLUENE	8260	µg/L	5	<5	<5
1,2-DIBROMO-3-CHLOROPROPANE (DB	8260	µg/L	5	<5	<5
1,2-DIBROMOETHANE (EDB)	8260	µg/L	5	<5	<5
DIBROMOMETHANE	8260	µg/L	5	<5	<5
1,2-DICHLOROBENZENE	8260	µg/L	5	<5	<5
1,3-DICHLOROBENZENE	8260	µg/L	5	<5	<5
1,4-DICHLOROBENZENE	8260	µg/L	5	<5	<5
DICHLORODIFLUOROMETHANE	8260	µg/L	5	<5	<5
1,1-DICHLOROETHANE	8260	µg/L	5	<5	<5
1,2-DICHLOROETHANE	8260	µg/L	5	<5	<5
1,1-DICHLOROETHENE	8260	µg/L	5	<5	<5

Applied P & Ch Laboratory
13780 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-640 98-06917-1	Analysis Result 20242-641 98-06917-2
CIS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5
TRANS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5
1,2-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5
1,3-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5
2,2-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5
1,1-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5
CIS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5
TRANS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5
ETHYLBENZENE	8260	µg/L	5	< 5	< 5
HEXACHLOROBUTADIENE	8260	µg/L	5	< 5	< 5
ISOPROPYLBENZENE (CUMENE)	8260	µg/L	5	< 5	< 5
P-ISOPROPYLTOLUENE	8260	µg/L	5	< 5	< 5
METHYLENE CHLORIDE	8260	µg/L	5	1J	< 5
METHYL TERT-BUTYL ETHER	8260	µg/L	10	< 10	< 10
NAPHTHALENE	8260	µg/L	5	< 5	< 5
N-PROPYLBENZENE	8260	µg/L	5	< 5	< 5
STYRENE	8260	µg/L	5	< 5	< 5
1,1,1,2-TETRACHLOROETHANE	8260	µg/L	5	< 5	< 5
1,1,2,2-TETRACHLOROETHANE	8260	µg/L	5	< 5	< 5
TETRACHLOROETHENE	8260	µg/L	5	< 5	< 5
TOLUENE	8260	µg/L	5	< 5	< 5
1,2,3-TRICHLOROBENZENE	8260	µg/L	5	< 5	< 5
1,2,4-TRICHLOROBENZENE	8260	µg/L	5	< 5	< 5
1,1,1-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5
1,1,2-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5
TRICHLOROETHENE	8260	µg/L	5	< 5	< 5
TRICHLOROFLUOROMETHANE	8260	µg/L	5	< 5	< 5
1,2,3-TRICHLOROPROPANE	8260	µg/L	5	< 5	< 5
1,2,4-TRIMETHYLBENZENE	8260	µg/L	5	< 5	< 5
1,3,5-TRIMETHYLBENZENE	8260	µg/L	5	< 5	< 5
VINYL CHLORIDE	8260	µg/L	5	< 5	< 5
XYLENES (TOTAL)	8260	µg/L	15	< 15	< 15

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-642 98-06917-3	20242-643 98-06917-4	20242-644 98-06917-5
Dilution Factor				1	1	1
GASOLINE	M8015V	mg/L	0.05	0.87	< 0.05	< 0.05
Dilution Factor				1	1	1
TPH AS DIESEL	M8015E	mg/L	0.5	< 0.5	< 0.5	< 0.5
Dilution Factor				1	1	1
TPH AS MOTOR OIL	M8015E	mg/L	0.5	< 0.5	< 0.5	< 0.5
VOLATILE ORGANICS						
Dilution Factor				1	1	1
BENZENE	8260	µg/L	5	54	< 5	< 5
BROMOBENZENE	8260	µg/L	5	< 5	< 5	< 5
BROMOCHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5
BROMODICHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5
BROMOFORM	8260	µg/L	5	< 5	< 5	< 5
BROMOMETHANE	8260	µg/L	5	< 5	< 5	< 5
N-BUTYLBENZENE	8260	µg/L	5	< 5	< 5	< 5
SEC-BUTYLBENZENE	8260	µg/L	5	< 5	< 5	< 5
TERT-BUTYLBENZENE	8260	µg/L	5	0.9J	< 5	< 5
CARBON TETRACHLORIDE	8260	µg/L	5	< 5	< 5	< 5
CHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5
DIBROMOCHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5
CHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5
CHLOROFORM	8260	µg/L	5	< 5	< 5	< 5
CHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5
2-CHLOROTOLUENE	8260	µg/L	5	< 5	< 5	< 5
4-CHLOROTOLUENE	8260	µg/L	5	< 5	< 5	< 5
1,2-DIBROMO-3-CHLOROPROPANE (DB	8260	µg/L	5	< 5	< 5	< 5
1,2-DIBROMOETHANE (EDB)	8260	µg/L	5	< 5	< 5	< 5
DIBROMOMETHANE	8260	µg/L	5	< 5	< 5	< 5
1,2-DICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5
1,3-DICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5
1,4-DICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5
DICHLORODIFLUOROMETHANE	8260	µg/L	5	< 5	< 5	< 5
1,1-DICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5
1,2-DICHLOROETHANE	8260	µg/L	5	6	< 5	< 5
1,1-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5
CIS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5
TRANS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5
1,2-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5
1,3-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5
2,2-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5
1,1-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 5

TF2MW-04

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-642 98-06917-3	20242-643 98-06917-4	20242-644 98-06917-5
CIS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 5
TRANS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 5
ETHYLBENZENE	8260	µg/L	5	< 5	< 5	< 5
HEXACHLOROBUTADIENE	8260	µg/L	5	< 5	< 5	< 5
ISOPROPYLBENZENE (CUMENE)	8260	µg/L	5	50	< 5	< 5
P-ISOPROPYLTOLUENE	8260	µg/L	5	< 5	< 5	< 5
METHYLENE CHLORIDE	8260	µg/L	5	< 5	< 5	< 5
METHYL TERT-BUTYL ETHER	8260	µg/L	10	< 10	< 10	< 10
NAPHTHALENE	8260	µg/L	5	< 5	< 5	< 5
N-PROPYLBENZENE	8260	µg/L	5	< 5	< 5	< 5
STYRENE	8260	µg/L	5	< 5	< 5	< 5
1,1,1,2-TETRACHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5
1,1,2,2-TETRACHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5
TETRACHLOROETHENE	8260	µg/L	5	0.5J	1J	< 5
TOLUENE	8260	µg/L	5	< 5	< 5	< 5
1,2,3-TRICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5
1,2,4-TRICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5
1,1,1-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5
1,1,2-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5
TRICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5
TRICHLOROFLUOROMETHANE	8260	µg/L	5	< 5	< 5	< 5
1,2,3-TRICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5
1,2,4-TRIMETHYLBENZENE	8260	µg/L	5	10	< 5	< 5
1,3,5-TRIMETHYLBENZENE	8260	µg/L	5	0.7J	< 5	< 5
VINYL CHLORIDE	8260	µg/L	5	< 5	< 5	< 5
XYLENES (TOTAL)	8260	µg/L	15	56	< 15	< 15

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Preliminary Results
Subject to Change

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

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

217258

FORM 0019 REV. 2-97

LAB COORDINATOR: Carlisle Williams	LAB COORDINATOR'S PHONE: 949 263 1146	LAB COORDINATOR'S FAX: 949 475 5433	LABORATORY SERVICE ID:	LABORATORY CONTACT: Jim Lin	MAIL REPORT (COMPANY NAME): OHM
NAME: Groundwater Sampling	PROJECT LOCATION: MCAS, El Toro	PROJECT NUMBER: 20242	LABORATORY PHONE: (909) 590-1828	LABORATORY FAX:	RECIPIENT NAME: Dwayne Ichida
CONTACT: Carlisle Williams	PROJECT PHONE NUMBER:	PROJECT FAX:	LABORATORY ADDRESS: APCL		ADDRESS: 2031 Main St.
ADDRESS: MCAS, El Toro	CITY, STATE AND ZIPCODE: Santa Ana CA	CLIENT: Lynn Hornecker, SSDIV	CITY, STATE AND ZIPCODE: Chino CA		CITY, STATE, AND ZIPCODE: Irvine CA 92614
MANAGER: Neil Sedlak	PROJECT MANAGER'S PHONE: 949 263 1146	PROJECT MANAGER'S FAX: 949 263 1147			

Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 8260 + MTBE	TPH Kerosene	TPH Extractable	Comments
20242-645	Water	12-15-98	0700	4° HCl	1	III	Sdy	X			
20242-646	Water	12-15-98	0850	Soil Label	5 for Lab #1	III	Sdy	X	X	X	
20242-647	Water	12-15-98	1135	Soil Label	5	III	Sdy	X	X	X	
20242-648	Water	12-15-98	1420	Soil Label	5	III	Sdy	X	X	X	

SAMPLES COLLECTED BY: Adnan Siddiqui	COOLER AND AIR BILL NUMBER:			COOLER TEMPERATURE UPON RECEIPT:
RELINQUISHED BY: Adnan Siddiqui	RECEIVED BY: [illegible]	DATE: 12-15-98	TIME: 1520	SAMPLE'S CONDITION UPON RECEIPT:

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	G	C	F	QC
1)	Trip Blank	X			X
2)	TF2MW-03 @ ~~157'~~ 157' (9-3)	X		X	
3)	EQUIPMENT RINSATE	X		X	X
4)	TF2MW-01 @ 157'	X		X	

Comments

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

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
OHM Remediation Services (Irvine)
Attention: Dwayne Ishida
2031 Main St.
Irvine CA 92714
Tel: (714)263-1146 Fax: (714)263-1147

Service ID #: 801-986919
Collected by: Adnan Siddiqui
Collected on: 12/15/98

Received: 12/15/98
Extracted: 12/16/98
Tested: 12/16-18/98
Reported: 12/23/98

Sample Description: Water from MCAS El Toro
Project Description: 20242

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-645 98-06919-1	20242-646 98-06919-2	20242-647 98-06919-3	20242-648 98-06919-4
Dilution Factor				1	1	1	1
GASOLINE	M8015V	mg/L	0.05	-	1.02	< 0.05	2.52
Dilution Factor				1	1	1	1
TPH AS DIESEL	M8015E	mg/L	0.5	-	< 0.5	< 0.5	< 0.5
Dilution Factor				1	1	1	1
TPH AS MOTOR OIL	M8015E	mg/L	0.5	-	< 0.5	< 0.5	< 0.5
VOLATILE ORGANICS							
Dilution Factor				1	1	1	10
BENZENE	8260	µg/L	5	< 5	43	< 5	440
BROMOBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
BROMOCHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
BROMODICHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
BROMOFORM	8260	µg/L	5	< 5	< 5	< 5	< 50
BROMOMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
N-BUTYLBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
SEC-BUTYLBENZENE	8260	µg/L	5	< 5	0.8J	< 5	< 50
TERT-BUTYLBENZENE	8260	µg/L	5	< 5	0.5J	< 5	< 50
CARBON TETRACHLORIDE	8260	µg/L	5	< 5	< 5	< 5	< 50
CHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
DIBROMOCHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
CHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
CHLOROFORM	8260	µg/L	5	< 5	< 5	< 5	< 50
CHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
2-CHLOROTOLUENE	8260	µg/L	5	< 5	< 5	< 5	< 50
4-CHLOROTOLUENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2-DIBROMO-3-CHLOROPROPANE (DB	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2-DIBROMOETHANE (EDB)	8260	µg/L	5	< 5	< 5	< 5	< 50
DIBROMOMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2-DICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,3-DICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,4-DICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
DICHLORODIFLUOROMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,1-DICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50

TF2-MW03 TF2 MW01

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-645 98-06919-1	20242-646 98-06919-2	20242-647 98-06919-3	20242-648 98-06919-4
1,2-DICHLOROETHANE	8260	µg/L	5	< 5	2J	< 5	17J
1,1-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5	< 50
CIS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5	< 50
TRANS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,3-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5	< 50
2,2-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,1-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 5	< 50
CIS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 5	< 50
TRANS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 5	< 50
ETHYLBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
HEXACHLOROBUTADIENE	8260	µg/L	5	< 5	< 5	< 5	< 50
ISOPROPYLBENZENE (CUMENE)	8260	µg/L	5	< 5	34	< 5	290
P-ISOPROPYLTOLUENE	8260	µg/L	5	< 5	< 5	< 5	< 50
METHYLENE CHLORIDE	8260	µg/L	5	1J	< 5	< 5	9J
METHYL TERT-BUTYL ETHER	8260	µg/L	10	< 10	< 10	< 10	< 100
NAPHTHALENE	8260	µg/L	5	< 5	< 5	< 5	< 50
N-PROPYLBENZENE	8260	µg/L	5	< 5	0.6J	< 5	< 50
STYRENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,1,1,2-TETRACHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,1,2,2-TETRACHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
TETRACHLOROETHENE	8260	µg/L	5	< 5	< 5	< 5	< 50
TOLUENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2,3-TRICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2,4-TRICHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,1,1-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,1,2-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
TRICHLOROETHENE	8260	µg/L	5	< 5	0.4J	< 5	< 50
TRICHLOROFLUOROMETHANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2,3-TRICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 5	< 50
1,2,4-TRIMETHYLBENZENE	8260	µg/L	5	< 5	6	< 5	8J
1,3,5-TRIMETHYLBENZENE	8260	µg/L	5	< 5	0.4J	< 5	< 50
VINYL CHLORIDE	8260	µg/L	5	< 5	< 5	< 5	< 50
XYLENES (TOTAL)	8260	µg/L	15	< 15	31	< 15	110J

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Preliminary Results
Subject to Change

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

SOUTHWESTNAVFACENGCOM
CODE 56MC.LMH
SAN DIEGO, CA 92101

Tank 398 Site
Groundwater Data
(December 1998)

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
217277
FORM 0019 REV. 2-97

LAB COORDINATOR: zar Tintut-Williams	LAB COORDINATOR'S PHONE: (949) 263-1146	LAB COORDINATOR'S FAX: (949) 475-5433	LABORATORY SERVICE ID:	LABORATORY CONTACT: JIM LIN	MAIL REPORT (COMPANY NAME): OHM Remediation
CT NAME: oundwater Sampling	PROJECT LOCATION: MCAS EL TORO	PROJECT NUMBER: 20242	LABORATORY PHONE: (949) 540-1878	LABORATORY FAX:	RECIPIENT NAME: Dwayne Ishida
CT CONTACT: zar Tintut-Williams	PROJECT PHONE NUMBER: (949) 263-1146	PROJECT FAX: (949) 263-1147	LABORATORY ADDRESS: APCL		ADDRESS: 2031 Main Street
CT ADDRESS: AS EL TORO	CITY, STATE AND ZIPCODE: Santa Ana, CA	CLIENT: Lynn Hornecker-SWDIV	CITY, STATE AND ZIPCODE: Chino, CA		CITY, STATE, AND ZIPCODE: Irvine, CA
CT MANAGER: LL SEDLAK	PROJECT MANAGER'S PHONE: (949) 263-1146	PROJECT MANAGER'S FAX: (949) 263-1147			

Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 8020 + MTBE	TPH-purgeable	TPH-Extractable	8260 + MTBE					Comments
20242-649	Water	12/16/97	0710	[illegible]	2	III	5 DAY	X	X	X	X					
20242-650	Water	12/16/97	0820	[illegible]	5	III	5 DAY		X	X	X					'HOLD' analyze only if 20242-655 is detected
20242-654	Water	12/16/97	1125	[illegible] labels	5	III	5 DAY	X	X	X						
20242-655	Water	12/16/97	1450	[illegible] labels	5	III	5 DAY	X	X	X						

12/17/97

PLES COLLECTED BY: [signature]
COURIER AND AIR BILL NUMBER:
COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
[signature]	[signature]	12/16/97	1520	

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	QC
(1). Trip Blank	X		X	X
(2) Equipment Rinsate after TF2MW-01	X		X	X
(3) 398MW-17	X		X	
(4) Equipment Rinsate after 398MW-17	X		X	

Comments

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

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
OHM Remediation Services (Irvine)
Attention: Dwayne Ishida
2031 Main St.
Irvine CA 92714
Tel: (714)263-1146 Fax: (714)263-1147

Service ID #: 801-986949
Collected by: Thizar T Williams
Collected on: 12/16/98

Received: 12/16/98
Extracted: 12/17/98
Tested: 12/17-21/98
Reported: 12/29/98

Sample Description: Groundwater from MCAS El Toro
Project Description: 20242 Groundwater Sampling

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-649 98-06949-1	20242-654 98-06949-3	20242-655 98-06949-4
Dilution Factor				1	1	1
GASOLINE	M8015V	mg/L	0.05	< 0.05	0.66	< 0.05

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-654 98-06949-3	20242-655 98-06949-4
BTXE + MTBE					
Dilution Factor				1	1
BENZENE	8020	µg/L	0.5	2.6	< 0.5
ETHYLBENZENE	8020	µg/L	0.5	4.4	< 0.5
TOLUENE	8020	µg/L	0.5	0.3J	< 0.5
XYLENES (TOTAL)	8020	µg/L	1.5	2.1	0.2J
METHYL-T-BUTYL ETHER (MTBE)	8020	µg/L	5	2.5J	< 5
Dilution Factor				1	1
TPH AS DIESEL	M8015E	mg/L	0.5	0.6 [u]	0.8
Dilution Factor				1	1
TPH AS MOTOR OIL	M8015E	mg/L	0.5	< 0.5	< 0.5

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-649 98-06949-1
VOLATILE ORGANICS				
Dilution Factor				1
ACETONE	8260	µg/L	50	< 50
BENZENE	8260	µg/L	5	< 5
BROMODICHLOROMETHANE	8260	µg/L	5	< 5
BROMOFORM	8260	µg/L	5	< 5
BROMOMETHANE	8260	µg/L	5	< 5
2-BUTANONE (MEK)	8260	µg/L	50	< 50

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-649 98-06949-1
CARBON DISULFIDE	8260	µg/L	5	< 5
CARBON TETRACHLORIDE	8260	µg/L	5	< 5
CHLOROBENZENE	8260	µg/L	5	< 5
DIBROMOCHLOROMETHANE	8260	µg/L	5	< 5
CHLOROETHANE	8260	µg/L	5	< 5
2-CHLOROETHYL VINYL ETHER	8260	µg/L	50	< 50
CHLOROFORM	8260	µg/L	5	< 5
CHLOROMETHANE	8260	µg/L	5	< 5
1,1-DICHLOROETHANE	8260	µg/L	5	< 5
1,2-DICHLOROETHANE	8260	µg/L	5	< 5
1,1-DICHLOROETHENE	8260	µg/L	5	< 5
CIS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5
TRANS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5
1,2-DICHLOROPROPANE	8260	µg/L	5	< 5
CIS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5
TRANS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5
ETHYLBENZENE	8260	µg/L	5	< 5
2-HEXANONE	8260	µg/L	50	< 50
METHYLENE CHLORIDE	8260	µg/L	5	1J
4-METHYL-2-PENTANONE (MIBK)	8260	µg/L	50	< 50
METHYL TERT-BUTYL ETHER	8260	µg/L	10	< 10
STYRENE	8260	µg/L	5	< 5
1,1,2,2-TETRACHLOROETHANE	8260	µg/L	5	< 5
TETRACHLOROETHENE	8260	µg/L	5	< 5
TOLUENE	8260	µg/L	5	< 5
1,1,1-TRICHLOROETHANE	8260	µg/L	5	< 5
1,1,2-TRICHLOROETHANE	8260	µg/L	5	< 5
TRICHLOROETHENE	8260	µg/L	5	< 5
VINYL ACETATE	8260	µg/L	50	< 50
VINYL CHLORIDE	8260	µg/L	5	< 5
XYLENES (TOTAL)	8260	µg/L	15	< 15

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0
(a) Similar to Jet Fuel.

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

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

217280

FORM 0019 REV. 2-97

LAB COORDINATOR: ur Tinhut-Williams	LAB COORDINATOR'S PHONE: (949) 263-1146	LAB COORDINATOR'S FAX: (949) 475-5433	LABORATORY SERVICE ID:	LABORATORY CONTACT: JIM LIN	MAIL REPORT (COMPANY NAME): OHM Remediation
NAME: ind Water Sampling	PROJECT LOCATION: MCAS EL TORO	PROJECT NUMBER: 20242	LABORATORY PHONE: (909) 590-1828	LABORATORY FAX:	RECIPIENT NAME: Dwayne Ishida
CONTACT: ur Tinhut-Williams	PROJECT PHONE NUMBER: (949) 263-1146	PROJECT FAX: (949) 263-1147	LABORATORY ADDRESS: APCL		ADDRESS: 2031 Main Street
ADDRESS: IS EL TORO	CITY, STATE AND ZIPCODE: Santa Ana, CA	CLIENT: Lynn Homecher - SWDIV	CITY, STATE AND ZIPCODE: Chino, CA		CITY, STATE AND ZIPCODE: Irvine, CA
MANAGER: . SEDIAK	PROJECT MANAGER'S PHONE: (949) 263-1146	PROJECT MANAGER'S FAX: (949) 263-1147			

Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 8020 GRO TPH	TPH-Diesel	TPH-Extractable						Comments
20242-656	Water	12/17/98	700	4°/HCl	2	III	5 DAY	X	X							
20242-657	Water	12/17/98	0945	See Label	5	III	5 DAY	X	X	X						
20242-658	Water	12/17/98	1150	See Label	5	III	5 DAY	X	X	X						
20242-659	Water	12/17/98	1435	See Label	5	III	5 DAY	X	X	X						
20242-660	Water	12/17/98	1555	See Label	5	III	5 DAY									FIELD Analyses Only if 20242-658 is Detected.

12/17/98

ES COLLECTED BY:	COURIER AND AIR BILL NUMBER:			COOLER TEMPERATURE UPON RECEIPT:
RELINQUISHED BY:	RECEIVED BY:	DATE: 12/17/98	TIME: 1000	SAMPLE'S CONDITION UPON RECEIPT:

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	QC
(1) Trip Blank	X			X
(2) 398MW-13	X		X	
(3) Equipment Rinsate after 398MW-13	X		X	X
(4) 398MW-20	X		X	
(5) Equipment Rinsate after 398MW-20	X		X	X

Comments

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

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
OHM Remediation Services (Irvine)
Attention: Dwayne Ishida
2031 Main St.
Irvine CA 92714
Tel: (714)263-1146 Fax: (714)263-1147

Service ID #: 801-986996
Collected by: Thizar T.W.
Collected on: 12/17/98

Received: 12/17/98
Extracted: 12/18/98
Tested: 12/18-22/98
Reported: 12/23/98

Sample Description: Groundwater from MCAS El Toro
Project Description: 20242 Ground Water Sampling

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-656 98-06996-1	20242-657 98-06996-2
Dilution Factor				1	1
GASOLINE	M8015V	mg/L	0.05	< 0.05	< 0.05
BENZENE	8020	µg/L	0.5	< 0.5	< 0.5
ETHYLBENZENE	8020	µg/L	0.5	< 0.5	< 0.5
TOLUENE	8020	µg/L	0.5	< 0.5	< 0.5
XYLENES (TOTAL)	8020	µg/L	1	< 1	< 1
METHYL TERT-BUTYL ETHER	8020	µg/L	5	< 5	< 5
Dilution Factor				1	1
TPH AS DIESEL	M8015E	mg/L	0.5	-	< 0.5
Dilution Factor				1	1
TPH AS MOTOR OIL	M8015E	mg/L	0.5	-	< 0.5

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-658 98-06996-3	20242-659 98-06996-4
Dilution Factor				1	1
GASOLINE	M8015V	mg/L	0.05	< 0.05	0.1
BENZENE	8020	µg/L	0.5	< 0.5	0.9
ETHYLBENZENE	8020	µg/L	0.5	< 0.5	1.0
TOLUENE	8020	µg/L	0.5	< 0.5	< 0.5
XYLENES (TOTAL)	8020	µg/L	1	< 1	0.3J
METHYL TERT-BUTYL ETHER	8020	µg/L	5	< 5	< 5
Dilution Factor				1	1
TPH AS DIESEL	M8015E	mg/L	0.5	< 0.5	0.1J
Dilution Factor				1	1
TPH AS MOTOR OIL	M8015E	mg/L	0.5	< 0.5	< 0.5

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit
N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.
J: Reported between PQL and MDL.
Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

Respectfully submitted,

Dominic Lau
Laboratory Director
Applied P & Ch Laboratory

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

217284

FORM 0019 REV. 2-97

LAB COORDINATOR: Gary Tintut Williams	LAB COORDINATOR'S PHONE: (949) 263-1146	LAB COORDINATOR'S FAX: (949) 475-5433	LABORATORY SERVICE ID: 987022	LABORATORY CONTACT: Jim Lin	MAIL REPORT (COMPANY NAME): OHM Remediation
PROJECT NAME: Groundwater Sampling	PROJECT LOCATION: MCAS, El Toro	PROJECT NUMBER: 20242	LABORATORY PHONE: (909) 590-1828	LABORATORY FAX:	RECIPIENT NAME: Dwayne Slider
PROJECT CONTACT: Gary Tintut Williams	PROJECT PHONE NUMBER: (949) 263-1146	PROJECT FAX: (949) 263-1147	LABORATORY ADDRESS: APCL		ADDRESS: 2031 Main Street
PROJECT ADDRESS: MCAS El Toro	CITY, STATE AND ZIPCODE: Santa Ana, CA	CLIENT: Lynn Hornecker - SWDIV	CITY, STATE, AND ZIPCODE: Chino, CA		CITY, STATE, AND ZIPCODE: Irvine, CA
PROJECT MANAGER: Neil Sedlak	PROJECT MANAGER'S PHONE: (949) 263-1146	PROJECT MANAGER'S FAX: (949) 263-1147			

Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 8260 + MTBE	TPH Purgeable	TPH Extractable					Comments
20242-661	Water	12-18-98	0945	See Label	5	IV-III Dup	5 Days	X	X	X					
20242-662	Water	12-18-98	0950	See Label	5	IV	5 Days	X	X	X					
20242-663	Water	12-18-98	0715	HCl	1	III	5 Days	X							
20242-664	Water	12-18-98	1145	See Label	5	III	5 Day	X	X	X					
20242-665	Water	12-18-98	1420	See Label	5	III	5 Days	X	X	X					

SAMPLES COLLECTED BY: Adnan Siddiqui

COOLER AND AIR BILL NUMBER:

COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
Adnan Siddiqui	[illegible]	12-18-98	[illegible]	

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	QC
1	TF398MW-06 @ 208'	X		X	
2	TF398MW-06 Duplicate	X		X	X
3	Trip Blank	X			X
4	EQUIPMENT RINSATE after 398MW06, Before 398MW05	X		X	X
5	Sample @ TF398MW-05 @ 215'	X		X	

Comments

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

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Submitted to:
OHM Remediation Services (Irvine)
Attention: Dwayne Ishida
2031 Main St.
Irvine CA 92714
Tel: (714)263-1146 Fax: (714)263-1147

Service ID #: 801-987022
Collected by: Adnan S.
Collected on: 12/18/98

Received: 12/18/98
Extracted: 12/21/98
Tested: 12/21-23/98
Reported: 12/30/98

Sample Description: Groundwater from MCAS, El Toro
Project Description: 20242 Ground Water Sampling

Analysis of Water Samples

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-661 98-07022-1	Analysis Result 20242-662 98-07022-2
Dilution Factor				1	1
GASOLINE	M8015V	mg/L	0.05	1.55	1.61
Dilution Factor				1	1
TPH AS DIESEL	M8015E	mg/L	0.5	<0.5	<0.5
TPH AS JP-5	M8015E	mg/L	0.5	0.8	0.8
TPH AS MOTOR OIL	M8015E	mg/L	0.5	<0.5	<0.5
VOLATILE ORGANICS					
Dilution Factor				10	10
ACETONE	8260	µg/L	50	<500	<500
BENZENE	8260	µg/L	5	23J	23J
BROMODICHLOROMETHANE	8260	µg/L	5	<50	<50
BROMOFORM	8260	µg/L	5	<50	<50
BROMOMETHANE	8260	µg/L	5	<50	<50
2-BUTANONE (MEK)	8260	µg/L	50	<500	<500
CARBON DISULFIDE	8260	µg/L	5	<50	<50
CARBON TETRACHLORIDE	8260	µg/L	5	<50	<50
CHLOROBENZENE	8260	µg/L	5	<50	<50
DIBROMOCHLOROMETHANE	8260	µg/L	5	<50	<50
CHLOROETHANE	8260	µg/L	5	<50	<50
2-CHLOROETHYL VINYL ETHER	8260	µg/L	50	<500	<500
CHLOROFORM	8260	µg/L	5	<50	<50
CHLOROMETHANE	8260	µg/L	5	<50	<50
1,1-DICHLOROETHANE	8260	µg/L	5	<50	<50
1,2-DICHLOROETHANE	8260	µg/L	5	<50	<50
1,1-DICHLOROETHENE	8260	µg/L	5	<50	<50
CIS-1,2-DICHLOROETHENE	8260	µg/L	5	<50	<50
TRANS-1,2-DICHLOROETHENE	8260	µg/L	5	<50	<50
1,2-DICHLOROPROPANE	8260	µg/L	5	<50	<50
CIS-1,3-DICHLOROPROPENE	8260	µg/L	5	<50	<50
TRANS-1,3-DICHLOROPROPENE	8260	µg/L	5	<50	<50
ETHYLBENZENE	8260	µg/L	5	150	150
2-HEXANONE	8260	µg/L	50	<500	<500
METHYLENE CHLORIDE	8260	µg/L	5	6J	<50
4-METHYL-2-PENTANONE (MIBK)	8260	µg/L	50	<500	<500
METHYL TERT-BUTYL ETHER	8260	µg/L	10	<100	<100
STYRENE	8260	µg/L	5	<50	<50
1,1,2,2-TETRACHLOROETHANE	8260	µg/L	5	<50	<50
TETRACHLOROETHENE	8260	µg/L	5	<50	<50
TOLUENE	8260	µg/L	5	<50	<50
1,1,1-TRICHLOROETHANE	8260	µg/L	5	<50	<50
1,1,2-TRICHLOROETHANE	8260	µg/L	5	<50	<50
TRICHLOROETHENE	8260	µg/L	5	4J	<50
VINYL ACETATE	8260	µg/L	50	<500	<500
VINYL CHLORIDE	8260	µg/L	5	<50	<50
XYLENES (TOTAL)	8260	µg/L	15	<150	<150

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-663 98-07022-3	20242-664 98-07022-4	20242-665 98-07022-5
Dilution Factor				1	1	5
GASOLINE	M8015V	mg/L	0.05	< 0.05	< 0.05	5.0
TPH: DIESEL, MOTOR OIL, JP-5						
Dilution Factor				1	1	1
TPH AS DIESEL	M8015E	mg/L	0.5	-	< 0.5	< 0.5
TPH AS JP-5	M8015E	mg/L	0.5	-	< 0.5	2.2 [a]
TPH AS MOTOR OIL	M8015E	mg/L	0.5	-	< 0.5	< 0.5
VOLATILE ORGANICS						
Dilution Factor				1	1	10
ACETONE	8260	µg/L	50	< 50	< 50	< 500
BENZENE	8260	µg/L	5	< 5	< 5	400
BROMODICHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 50
BROMOFORM	8260	µg/L	5	< 5	< 5	< 50
BROMOMETHANE	8260	µg/L	5	< 5	< 5	< 50
2-BUTANONE (MEK)	8260	µg/L	50	< 50	< 50	< 500
CARBON DISULFIDE	8260	µg/L	5	< 5	< 5	< 50
CARBON TETRACHLORIDE	8260	µg/L	5	< 5	< 5	< 50
CHLOROBENZENE	8260	µg/L	5	< 5	< 5	< 50
DIBROMOCHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 50
CHLOROETHANE	8260	µg/L	5	< 5	< 5	< 50
2-CHLOROETHYL VINYL ETHER	8260	µg/L	50	< 50	< 50	< 500
CHLOROFORM	8260	µg/L	5	< 5	< 5	< 50
CHLOROMETHANE	8260	µg/L	5	< 5	< 5	< 50
1,1-DICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 50
1,2-DICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 50
1,1-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 50
CIS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 50
TRANS-1,2-DICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 50
1,2-DICHLOROPROPANE	8260	µg/L	5	< 5	< 5	< 50
CIS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 50
TRANS-1,3-DICHLOROPROPENE	8260	µg/L	5	< 5	< 5	< 50
ETHYLBENZENE	8260	µg/L	5	< 5	< 5	400
2-HEXANONE	8260	µg/L	50	< 50	< 50	< 500
METHYLENE CHLORIDE	8260	µg/L	5	2J	< 5	< 50
4-METHYL-2-PENTANONE (MIBK)	8260	µg/L	50	< 50	< 50	< 500
METHYL TERT-BUTYL ETHER	8260	µg/L	10	< 10	< 10	< 100
STYRENE	8260	µg/L	5	< 5	< 5	< 50
1,1,2,2-TETRACHLOROETHANE	8260	µg/L	5	< 5	< 5	< 50
TETRACHLOROETHENE	8260	µg/L	5	< 5	0.4J	< 50
TOLUENE	8260	µg/L	5	< 5	< 5	< 50
1,1,1-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 50

Applied P & Ch Laboratory
13760 Magnolia Ave. Chino CA 91710
Tel: (909) 590-1828 Fax: (909) 590-1498

APCL Analytical Report

Component Analyzed	Method	Unit	PQL	Analysis Result 20242-663 98-07022-3	20242-664 98-07022-4	20242-665 98-07022-5
1,1,2-TRICHLOROETHANE	8260	µg/L	5	< 5	< 5	< 50
TRICHLOROETHENE	8260	µg/L	5	< 5	< 5	< 50
VINYL ACETATE	8260	µg/L	50	< 50	< 50	< 500
VINYL CHLORIDE	8260	µg/L	5	< 5	< 5	< 50
XYLENES (TOTAL)	8260	µg/L	15	< 15	< 15	< 150

PQL: Practical Quantitation Limit. MDL: Method Detection Limit. CRDL: Contract Required Detection Limit

N.D.: Not Detected or less than the practical quantitation limit. "-": Analysis is not required.

J: Reported between PQL and MDL.

Listed Dilution Factors (DF) are relative to the method default DF. All unlisted DFs are 1.0

(a) Unknown compounds in Jet fuel range.

Respectfully submitted,

Dominic Tau
Laboratory Director
Applied P & Ch Laboratory

SOUTHWESTNAVFACENGCOM
CODE 56MC.LMH
SAN DIEGO, CA 92101

Tank 398 Site
Vapor Samples
(December 1998)

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
217259
FORM 0019 REV. 2-97

LAB COORDINATOR: Zar Tintut-Williams	LAB COORDINATOR'S PHONE: (949)263-1146	LAB COORDINATOR'S FAX: (949)475-5433	LABORATORY SERVICE ID:	LABORATORY CONTACT: MARIA JONES	MAIL REPORT (COMPANY NAME): OHM Remediation
NAME: @ 398	PROJECT LOCATION: MCAS EL TORO	PROJECT NUMBER: 20242	LABORATORY PHONE: (626) 965-1006	LABORATORY FAX:	RECIPIENT NAME: Dwayne Ishida
CONTACT: Zar Tintut-Williams	PROJECT PHONE NUMBER: (949)263-1146	PROJECT FAX: (949)263-1147	LABORATORY ADDRESS: Quanterra		ADDRESS: 2031 Main Street
ADDRESS: AS EL TORO	CITY, STATE AND ZIPCODE: Santa Ana, CA	CLIENT: Lynn Hornecker - SWDIV.	CITY, STATE AND ZIPCODE: City of Industry, CA		CITY, STATE, AND ZIPCODE: Irvine, CA
MANAGER: SEDLAK	PROJECT MANAGER'S PHONE: (949)263-1146	PROJECT MANAGER'S FAX: (949)263-1147			

Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: BTEX+MTBE-TO2	TPH-Gas-TO3Mod	Carbon Chain in Fuel	Fixed Gases					Comments
20242.651	Vapor	12/16/98	1055	Ambient	2	III	5-DAY	X	X	X	X					
20242.652	Vapor	12/16/98	1105	Ambient	2	III	5-DAY	X	X	X	X					
20242.653	Vapor	12/16/98	1120	Ambient	2	III	5-DAY	X	X	X	X					

12/16/98

ES COLLECTED BY: [signature]	COURIER AND AIR BILL NUMBER:			COOLER TEMPERATURE UPON RECEIPT:
RELINQUISHED BY: [signature]	RECEIVED BY: [signature]	DATE: 12/16/98	TIME: 2-161	SAMPLE'S CONDITION UPON RECEIPT:

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	QC
(1) T398-SVE Ambient	X		X	X
(2) T398-SVE Eff.	X		X	
(3) T398-SVE Inf.	X		X	

Comments: 'Monthly Sampling'

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

EPA TO-3 - TVPE by GC

Client Name: OHM Remediation Services Corporation
Client ID: 20242-651
LAB ID: 135643-0001-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 16 DEC 98
Instrument: GC-5 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
TVPH as Gasoline	ND		1.0	ppm (v/v)

ND = Not Detected

EPA TO-3 - BTEX

Client Name: OHM Remediation Services Corporation
Client ID: 20242-651
LAB ID: 135643-0001-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 16 DEC 98
Instrument: GC-5 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Benzene	ND		0.020	ppmv
Toluene	ND		0.020	ppmv
Ethylbenzene	ND		0.020	ppmv
Xylenes (total)	ND		0.020	ppmv
Methyl t-butyl ether	ND		0.020	ppmv

ND = Not Detected

Modified EPA TO-3 - VOCs

Client Name: OHM Remediation Services Corporation
Client ID: 20242-651
LAB ID: 135643-0001-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 17 DEC 98
Instrument: GC-5 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
C5	ND		0.10	ppmv
C6	ND		0.10	ppmv
C7	ND		0.10	ppmv
C8	ND		0.10	ppmv
C9	ND		0.10	ppmv
C10+	ND		0.10	ppmv

ND = Not Detected

Fixed Gases
ASTM-D1946

Client Name: OHM Remediation Services Corporation
Client ID: 20242-651
LAB ID: 135643-0001-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 17 DEC 98
Instrument: GC-1 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Carbon dioxide	0.036		0.010	% (v/v)
Oxygen	22		0.10	% (v/v)
Nitrogen	78		1.0	% (v/v)
Methane	0.00025		0.00020	% (v/v)

EPA TO-3 - TVPH by GC

Client Name: OHM Remediation Services Corporation
Client ID: 20242-652
LAB ID: 135643-0002-SA
Matrix: AIR
Authorized: 16 DEC 98
Instrument: GC-5

Sampled: 16 DEC 98
Prepared: N/A
Dilution: 1.0

Received: 16 DEC 98
Analyzed: 16 DEC 98

Parameter	Result	Qualifier	RL	Units
TVPH as Gasoline	4.4	C	1.0	ppm (v/v)

C = Sample chromatographic pattern is not indicative of the standard pattern used to calibrate the gas chromatograph.

EPA TO-3 - BTEX

Client Name: OHM Remediation Services Corporation
Client ID: 20242-652
LAB ID: 135643-0002-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 16 DEC 98
Instrument: GC-5 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Benzene	ND		0.020	ppmv
Toluene	ND		0.020	ppmv
Ethylbenzene	ND		0.020	ppmv
Xylenes (total)	0.032		0.020	ppmv
Methyl t-butyl ether	ND		0.020	ppmv

ND = Not Detected

Modified EPA TO-3 - VOCs

Client Name: OHM Remediation Services Corporation
Client ID: 20242-652
LAB ID: 135643-0002-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 17 DEC 98
Instrument: GC-5 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
C5	ND		0.10	ppmv
C6	ND		0.10	ppmv
C7	ND		0.10	ppmv
C8	0.38		0.10	ppmv
C9	0.36		0.10	ppmv
C10+	0.81		0.10	ppmv

ND = Not Detected

Fixed Gases
ASTM-D1946

Client Name: OHM Remediation Services Corporation
Client ID: 20242-652
LAB ID: 135643-0002-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 17 DEC 98
Instrument: GC-1 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Carbon dioxide	1.8		0.10	% (v/v)
Oxygen	20		0.10	% (v/v)
Nitrogen	79		1.0	% (v/v)
Methane	0.0056		0.00020	% (v/v)

EPA TO-3 - TVPH by GC

Client Name: OHM Remediation Services Corporation
Client ID: 20242-653
LAB ID: 135643-0003-SA
Matrix: AIR
Sampled: 16 DEC 98
Received: 16 DEC 98
Authorized: 16 DEC 98
Prepared: N/A
Analyzed: 16 DEC 98
Instrument: GC-5
Dilution: 25

Parameter	Result	Qualifier	RL	Units
TVPH as Gasoline	1300	C	25	ppm (v/v)

C = Sample chromatographic pattern is not indicative of the standard pattern used to calibrate the gas chromatograph.

EPA TO-3 - BTEX

Client Name: OHM Remédiation Services Corporation
Client ID: 20242-653
LAB ID: 135643-0003-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 16 DEC 98
Instrument: GC-5 Dilution: 25

Parameter	Result	Qualifier	RL	Units
Benzene	ND		0.50	ppmv
Toluene	1.9		0.50	ppmv
Ethylbenzene	ND		0.50	ppmv
Xylenes (total)	18		0.50	ppmv
Methyl t-butyl ether	ND		0.50	ppmv

ND = Not Detected

Modified EPA TO-3 - VOCs

Client Name: OHM Remediation Services Corporation
Client ID: 20242-653
LAB ID: 135643-0003-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 17 DEC 98
Instrument: GC-5 Dilution: 5.0

Parameter	Result	Qualifier	RL	Units
C5	1.1		0.50	ppmv
C6	5.1		0.50	ppmv
C7	59		0.50	ppmv
C8	250		0.50	ppmv
C9	300		0.50	ppmv
C10+	650		0.50	ppmv

Fixed Gases
ASTM-D1946

Client Name: OHM Remediation Services Corporation
Client ID: 20242-653
LAB ID: 135643-0003-SA
Matrix: AIR Sampled: 16 DEC 98 Received: 16 DEC 98
Authorized: 16 DEC 98 Prepared: N/A Analyzed: 17 DEC 98
Instrument: GC-1 Dilution: 1.0

Parameter	Result	Qualifier	RL	Units
Carbon dioxide	1.8		0.10	% (v/v)
Oxygen	20		0.10	% (v/v)
Nitrogen	79		1.0	% (v/v)
Methane	0.018		0.00020	% (v/v)

OHM Remediation Services Corp.
A Subsidiary of OHM Corporation

OHM TRANSMITTAL/DELIVERABLE RECEIPT

CONTRACT N68711-93-D-1459 **DOCUMENT CONTROL NO: SW6408**

TO: Contracting Officer
Naval Facilities Engineering Command
Southwest Division
Bozier H. Demaree, Code 02R.BD
Building 131
1220 Pacific Highway
San Diego, California 92132-5101

Date: 16-Feb-99

D.O.: 112

Location: MCAS EL TORO

FROM: FOR
Stewart Bornhoft, Program Manager

Edwin G. Bond, Contracts Manager

DESCRIPTION OF ENCLOSURE: ***Transmittal of Technical Memorandum: Groundwater Data Summary, Former Petroleum Storage Facilities at Tank Farm 2 and Tank 398, dated January 25, 1999, Remediation of Various Underground Storage Tank Sites, dated February 12, 1999***

TYPE: Contract Deliverable ( ) ($) D. O. Deliverable ( ) (Tech) Request for Change ( ) Other (X)

VERSION: N/A **REVISION:** 0

ADMIN RECORD: Yes (X) No ( ) Category ( ) Confidential ( )

SCHEDULED DELIVERY DATE: 16-Feb-99 **ACTUAL DELIVERY DATE:** 16-Feb-99

NUMBER OF COPIES SUBMITTED TO THE NAVY: 1/O, 3/C, 2/E
[AS REQUIRED/DIRECTED BY THE (SOW)]

COPIES TO:

SWDIV	OHM	OTHER
Name, Code	Name, Location	Name, Company, Location
L. Holloway, 4EN.LLH (1C/1E)	File (1C/1E)	B. Coleman, (AR) BNI (2E)
L. Hornecker, 5BME.LH (1C/1E)	Chron (1C)	
G. Steinway, 5B02.GS (1C)	W. Sedlak, Irv (1C/1E)	

99 FEB 16 14 37

RECEIVED
COTR

Date/Time Received: _____ / _____

Doc Class: B-06