

Site Assessment Report

South Drainage Ditch at the Hobby Shop
Former Installation Restoration Program (IRP) Site 20, Unit 2
Marine Corps Air Station (MCAS), El Toro, California

2 October 1997

Prepared by Southwest Division, Naval Facilities Engineering Command
BRAC Operations Office
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CONTENTS

| Section | Page |
|---|------|
| 1 Introduction | 1 |
| 2 Previous Investigations of the Hobby Shop Vicinity | 1 |
| 2.1 Remedial Investigation of Site 20 - The Hobby Shop | 1 |
| 2.2 Remedial Investigation of Site 25 - The Major Drainages | 3 |
| 2.3 Resource Conservation and Recovery Act (RCRA) Facility Assessment | 3 |
| 2.4 Assessment of Aerial Photograph Anomalies | 3 |
| 3 Site Verification Activities | 3 |
| 4 Conclusions and Recommendations | 4 |
| 5 References | 5 |
| Table 1. Summary of Analytical Test Results for the South Drainage Ditch at the Hobby Shop | 7 |
| Table 2. Ground Water Quality Beneath and Downgradient from the South Drainage Ditch | 9 |
| Figure 1. Vicinity Map | 10 |
| Figure 2. Sample Locations | 11 |
| Appendices | |
| A Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Petroleum Exclusion Documentation | |
| B Extracts from the Marine Corps Air Station, El Toro: Installation Restoration Program Remedial Investigation Phase I Draft Technical Memorandum | |
| C Extracts from the Final Report, Aerial Photograph Assessment, MCAS El Toro | |
| D Site Photographs and Laboratory Test Reports | |

Section 1

Introduction

This Site Assessment Report summarizes the results of soil and ground water investigations conducted during the Remedial Investigation (RI) and the subsequent site verification activities at the petroleum release site - the South Drainage Ditch at the Hobby Shop (Buildings 625 and 626) - at the Marine Corps Air Station (MCAS), El Toro, California. The Report includes an evaluation of the potential for residual petroleum hydrocarbons to impact ground water quality.

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. Buildings 625 and 626 are used by military personnel for automobile maintenance and repair activities. The South Drainage Ditch, formerly known as Installation Restoration Program (IRP) Site 20, Unit 2, is located in the northwest section of the Station at the intersection of West Marine Way and North Ninth Street. Oil/water separators located within the Hobby Shop complex reportedly discharged wastewater to the drainage ditch that caused the release of petroleum hydrocarbons at this site. The location of the site is shown on Figure 1.

The South Drainage Ditch is approximately 200 feet long and approximately 10 feet wide. The alignment of the ditch is northwest to southeast and parallel to North Ninth Street.

The South Drainage Ditch was removed from the Installation Restoration Program by consensus of the Base Realignment and Closure (BRAC) Cleanup Team (BCT) through the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) petroleum exclusion in February 1997. The BCT agreement pertaining to the application of the petroleum exclusion to the South Drainage Ditch is presented in Appendix A. Following the signing of the agreement, the site was transferred to the Station's Petroleum Corrective Action Program with regulatory oversight by the Regional Water Quality Control Board, Santa Ana Region.

Section 2

Previous Investigations of the Hobby Shop Vicinity

2.1 Remedial Investigation of IRP Site 20 - The Hobby Shop

The South Drainage Ditch was investigated by the Jacobs Engineering Group (JEG) during the Phase I Remedial Investigation (RI) in 1992, and the results of the investigation were reported in the *Marine Corps Air Station, El Toro: Installation Restoration Program Phase I Draft Technical Memorandum* (JEG, 1993). A map of IRP Site 20 showing conditions prior to the petroleum exclusion agreement is presented in Appendix B.

Nine (9) shallow soil samples from the surface, 2 feet below ground surface (bgs), and 4 feet bgs were collected from three borings - 20_DD4, 20_DD5, and 20_DD6 - and approximately twelve (12) samples were collected at various depths during the construction of one ground water monitoring well - 20_DBMW55 - along the South Drainage Ditch. Petroleum hydrocarbons were identified in surface and near-surface soils.

The results of the laboratory analysis of soil samples from the RI are summarized in Table 1. The highest concentration of petroleum hydrocarbons, 84,560 milligrams/kilogram (mg/kg) as Total Recoverable Petroleum Hydrocarbons (TRPH), was identified in a surface sample from boring 20_DD6 at the northern section of the ditch, adjacent to the paved driveway to the Hobby Shop. The corresponding concentration of Total Petroleum Hydrocarbons (TPH) as diesel for the same sample was 59.8 mg/kg. TPH as gasoline was detected above reporting limits at concentrations less than 1 mg/kg in three samples from boring 20_DD4 at the southeast end of the ditch.

The results of analyses of soil samples from boring, 20_DD3, located in the East Drainage Ditch (a tributary to the South Drainage Ditch), indicate that, with the exception of gasoline at less than 1 mg/kg, petroleum hydrocarbons are not present above laboratory reporting limits.

The RI also included the construction of two other ground water monitoring wells - 20_DGMW88 and 20_UGMW36 - at IRP Site 20 in the vicinity of the South Drainage Ditch. Several rounds of groundwater monitoring have been completed at IRP Site 20 (JEG, 1994; CDM, 1997), and analytical results for petroleum hydrocarbons are presented in Table 2.

The depth to ground water at the South Drainage Ditch is approximately 175 feet bgs based upon 1997 water level measurements (CDM, 1997) at well 20_DBMW55, located on the south bank of the drainage ditch and well 20_DGMW88, located approximately 50 feet north of the drainage ditch. The gradient is northwest. The well construction logs indicate that the vadose zone is comprised of sands, silts, and clayey sands. Petroleum hydrocarbons were not detected above reporting limits in soil samples collected during well construction.

The East Drainage Ditch (Unit 1) and the Outside Service Area (Unit 4) of IRP Site 20 - Hobby Shop - were investigated during the Phase I and Phase II Remedial Investigations (JEG, 1993 and Bechtel, 1997). Risk calculations indicate that Units 1 and 4 do not pose a significant risk to human health or the environment. Human health risks were calculated based upon future residential use of the property for a period of thirty (30) years. Units 1 and 4 of IRP Site 20 have been recommended for no further action in the Proposed Plan (MCAS El Toro, June 1997).

The Stained Area (Former IRP Site 20, Unit 3) has been transferred from the IRP to the Petroleum Corrective Action Program via the CERCLA petroleum exclusion and regulatory closure has been achieved.

2.2 Remedial Investigation of IRP Site 25 - The Major Drainages

The South Drainage Ditch flows into drainage channels that discharge surface runoff into Bee Canyon Wash. Surface water and sediment samples were collected for analysis during the investigations of the major drainages of IRP Site 25 (JEG, 1993 and Bechtel, 1997), and human health and ecological risk assessments were conducted. The risk calculations indicate that the potential cancer risk for persons exposed to the sediment in the drainages is less than one additional case per one million persons which is considered an acceptable risk by the U. S. EPA. A hazard index greater than one indicates a potential for adverse impacts to wildlife, and the ecological hazard indexes at Bee Canyon Wash are estimated at less than one. Based upon the results of the risk assessment, IRP Site 25 was recommended for no further action in the Proposed Plan (MCAS El Toro, June 1997).

2.3 Resource Conservation and Recovery Act (RCRA) Facility Assessment

Solid Waste Management Units (SWMUs) including oil/water separators and an underground storage tank at the Hobby Shop were investigated during the Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) that was conducted by JEG in 1992. The results of the assessment are published in the *Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment Report for Marine Corps Air Station, El Toro, California* (JEG, 1993). UST 625 (also known as SWMU 156), an 800-gallon waste oil storage tank, was removed and regulatory closure of the site was achieved in 1996. The oil/water separators are scheduled to be closed when operational closure of the Hobby Shop occurs.

2.4 Assessment of Aerial Photograph Anomalies

The Hobby Shop vicinity was evaluated during the review of historical aerial photographs by Science Applications International Corporation (SAIC) and the results of the review are published in the *Final Report, Aerial Photograph Assessment, MCAS El Toro* (SAIC, 1993). Two anomalies, identified as wet soil and/or stained areas, were identified on photographs taken in 1968 and in 1979, in the vicinity of the Hobby Shop and adjacent drainage ditches. Anomalies 191 and 403 were identified in the 1968 and 1979 photographs, respectively. Anomaly 403 was identified as "stains or wet soil near the southwest corner of the Auto Hobby Shop, Building 625". Anomaly 191 was identified as a "probable stain" at the southeast corner of the Auto Hobby Shop. The inspections and sampling activities associated with the RI, the RFA, and the site verification activities at the South Drainage Ditch have addressed the anomaly sites, and no further actions are proposed. The anomaly locations are identified in Appendix C.

Section 3 Site Verification Activities

Site verification activities were conducted by OHM Remediation Services Corporation under Navy Contract N68711-93-D-1459, Delivery Order Number 50 during June 1997. Sampling activities were conducted in accordance with the *Draft Work Plan, Remediation of Various Underground Storage Tanks at the Marine Corps Air Station, El Toro* (OHM, 1995).

The site was visually inspected and utility clearance surveys were conducted prior to beginning the drilling and sampling operations. The drainage ditch showed evidence of recent erosion of several inches in the areas immediately adjacent to the paved driveway to the Hobby Shop. No stains were observed on surface soils within the ditch. Site photographs are presented in Appendix D.

A limited-access drilling rig was used for collection of soil samples on 12 June 1997. Four shallow soil borings (20 SB01 through 20 SB04) were drilled along the drainage ditch, and samples were collected from depths of 0.5 feet, 2.5 feet, and 4.5 feet. Eleven (11) soil samples were analyzed by Environmental Protection Agency (EPA) Method 8015 Modified for Total Petroleum Hydrocarbons (TPH) and EPA Method 8020 for Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX). Analytical results are presented in Table 1 and Appendix D, and sample locations are shown on Figure 2.

The results of the field investigation indicates that low levels of petroleum hydrocarbons are present in shallow soils along the drainage ditch. The maximum TPH concentration of 220 mg/kg (diesel to motor oil range: C₁₄ - C₃₃ hydrocarbon range) was reported at a depth of 0.5 feet bgs at boring 20 SB-02. BTEX compounds were not detected at levels above the stated reporting limit in any of the samples.

The migration potential of diesel fuel and heating oils has been evaluated at similar petroleum release sites (Southwest Division, Naval Facilities Engineering Command, 1997), and leachate concentrations have generally been less than 0.1 percent of the concentration in the associated soil samples.

Section 4

Conclusions and Recommendations

The potential for remaining petroleum hydrocarbons at the South Drainage Ditch at The Hobby Shop to impact ground water has been evaluated with consideration for the concentrations of the residual petroleum hydrocarbons, the guidelines presented in the *Leaking Underground Fuel Tank (LUFT) Field Manual: Guidelines for Site Assessment, Cleanup, and Underground Storage Tank Closure* (State of California, Water Resources Control Board, 1989), and the depth to ground water. The following conclusions are based upon information from the RI and the site verification activities:

- Based upon the evaluation of soil samples from seven (7) shallow soil borings and one deep boring at well 20_DBMW55, it does not appear that the shallow subsurface release is laterally or vertically extensive. The maximum concentration was 220 mg/kg in the diesel to motor oil hydrocarbon range. Residual petroleum hydrocarbon concentrations are relatively low compared to the allowable residual levels identified in the LUFT Field Manual for sites where ground water is located more than 100 feet below ground surface. Additionally, leaching potential analyses at similar petroleum release sites indicate a low migration potential for residual diesel and heating oil.

- Erosion of surface sediments may have resulted in the dilution of the surface release of petroleum hydrocarbons that was identified in 1992. Storm-water discharges from the South Drainage Ditch and other surface drainage channels are monitored under the National Pollutant Discharge Elimination System (NPDES) Permit CA 0106593, Order No. 93-16 issued to the Station by the Regional Water Quality Control Board, Santa Ana Region. Additionally, sediments and surface waters from the major drainage channels at MCAS El Toro have been sampled and evaluated during the RI, and no significant risks to human health or the environment have been identified.
- The residual petroleum hydrocarbons (diesel to motor oil hydrocarbon ranges) have limited mobility and pose minimal risk to ground water quality.

Based upon the limited extent and low concentrations associated with the release, the low leaching potential for residual diesel fuel, and the depth to ground water at the South Drainage Ditch (Former IRP Site 20, Unit 2), it is recommended that this unauthorized release case be closed.

Section 5

References

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Marine Corps Air Station, El Toro. 1997. Proposed Plan for Marine Corps Air Station, El Toro. (No Further Action Proposal for Eleven Sites (4, 6, 9, 10, 13, 15, 19, 20, 21, 22, and 25))

Marine Corps Air Station, El Toro. 1995. Base Realignment and Closure Cleanup Plan.

OHM Remediation Services Corporation. 1997. Information Package.

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State of California, Regional Water Quality Control Board, Santa Ana Region.
National Pollutant Discharge Elimination System (NPDES) Permit CA 0106593, Order No. 93-16, Marine Corps Air Station, El Toro.

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**TABLE 1. Summary of Analytical Test Results for the South Drainage Ditch
 at The Hobby Shop
 Marine Corps Air Station, El Toro**

| Soil Boring Number/ Date | Sample Depth (Feet Below Ground Surface) | Northing (feet) [North American Datum (NAD)] | Easting (feet) [North American Datum (NAD)] | TPH (mg/kg) [Method 8015 Mod unless otherwise noted] | Benzene (B), Toluene (T), Ethylbenzene (E), and Xylenes (X) (all concentrations in milligrams/kilogram) |
|---|--|--|---|---|--|
| Phase I Remedial Investigation Boring 20_DD4 Sample S1454170 | 0 | 4320923 (NAD 27) | 3727819 (NAD 27) | 0.235 mg/kg (TPH-Gasoline) | BETX - not identified at concentrations above the stated reporting limits |
| 20_DD4 Sample S1454526 | 0 | " | " | 0.05 mg/kg (TPH-Gasoline) | " |
| 20_DD4 S1454171 | 2 | " | " | 231 mg/kg TRPH (Method 418.1) 0.07 mg/kg (TPH-Gasoline) | " |
| Boring 20_DD5 Sample S1454184 | 0 | 432078 (NAD 27) | 3727832 (NAD 27) | 31.5 mg/kg (TPH-Diesel) 7,146 mg/kg TRPH (Method 418.1) | " |
| 20_DD5 Sample S1454193 | 2 | " | " | 13.4 "U" mg/kg (TPH-Diesel) | " |
| 20_DD5 Sample S1454211 | 4 | " | " | 14.9 "U" mg/kg (TPH-Diesel) | " |
| Boring 20_DD6 Sample S1454212 | 0 | 432058 (NAD 27) | 3727846 (NAD 27) | 59.8 mg/kg (TPH-Diesel) 84,590 mg/kg TRPH (Method 418.1) | " |
| 20_DD6 Sample S1454216 | 2 | " | " | 315 mg/kg TRPH (Method 418.1) | " |
| 20_DD6 Sample S1454254 | 4 | " | " | 60 mg/kg TRPH (Method 418.1) | " |
| Monitoring Well 20_DBMW55 (located in the South Drainage Ditch) | | 432061 (NAD 83) | 3727843 (NAD 83) | Not identified above the reporting limits for all TPH and TRPH analyses | " |

TABLE 1. Summary of Analytical Test Results (Continued)

| Soil Boring Number/ Date | Sample Depth (Feet Below Ground Surface) | Northing (feet) [North American Datum (NAD)] | Easting (feet) [North American Datum (NAD)] | TPH (mg/kg) [Method 8015 Mod unless otherwise noted] | Benzene (B), Toluene (T), Ethylbenzene (E), and Xylenes (X) (all concentrations in milligrams/kilogram) |
|---|--|--|---|--|---|
| Site Verification Boring 20 SB-01 Sample IRP20-470 | 0.5 | 2197348.2 (NAD 83) | 6110515.6 (NAD 83) | ND | BTEX ND |
| Boring 20 SB-01 Sample IRP20-471 | 2.5 | " | " | ND | " |
| Boring 20 SB-01 Sample IRP20-472 | 4.5 | " | " | 13 TPH-extractables (C14-C26*) | " |
| Boring 20 SB-02 Sample IRP20-473 | 0.5 | 2197333.9 (NAD 83) | 6110533.4 (NAD 83) | 220 TPH-extractables (C14-C33*) | " |
| Boring 20 SB-02 Sample IRP20-474 | 4.5 | " | " | ND | " |
| Boring 20 SB-03 Sample IRP20-475 | 0.5 | 2197316.3 (NAD 83) | 6110553.6 (NAD 83) | 61 TPH-extractables (C16-C31*) | " |
| Boring 20 SB-03 Sample IRP20-476 | 2.5 | " | " | 44 TPH-extractables (C17-C30*) | " |
| Boring 20 SB-03 Sample IRP20-477 | 4.5 | " | " | ND | " |
| Boring 20 SB-04 Sample IRP20-478 | 0.5 | 2197277.5 (NAD 83) | 6110600.2 (NAD 83) | ND | " |
| Boring 20 SB-04 Sample IRP20-479 | 2.5 | " | " | 71 TPH-extractables (C18-C32*) | " |
| Boring 20 SB-04 Sample IRP20-480 | 4.5 | " | " | ND | " |

Explanation

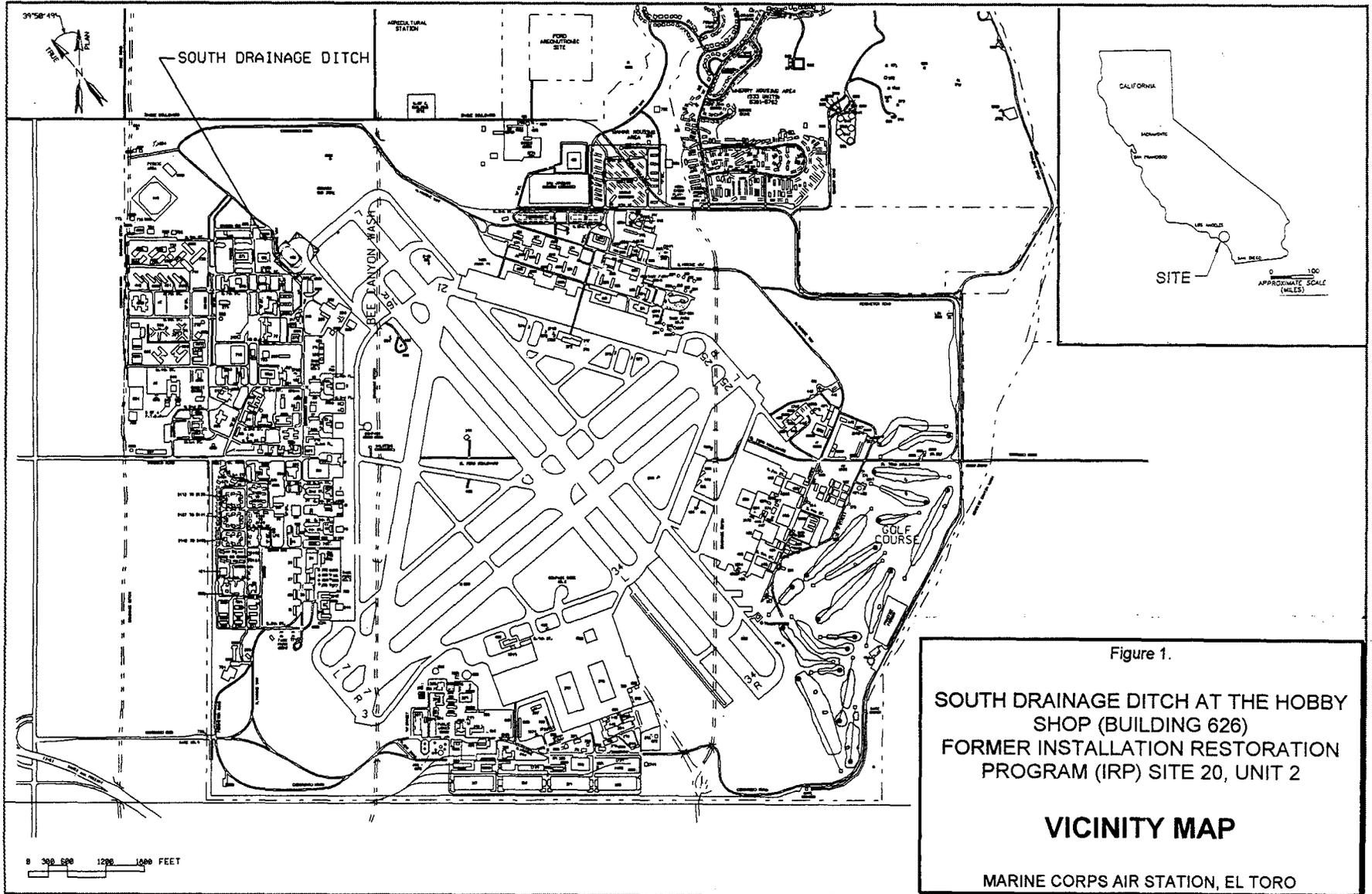
ND Not Detected Above Laboratory Reporting Limit
 U Not Detected Above the Stated Reporting Limit

*Hydrocarbon groups:

| | |
|--------------|-------------------|
| C10-C15 JP-5 | C10-C24 Diesel |
| C6-C12 Gas | C18-C34 Motor Oil |

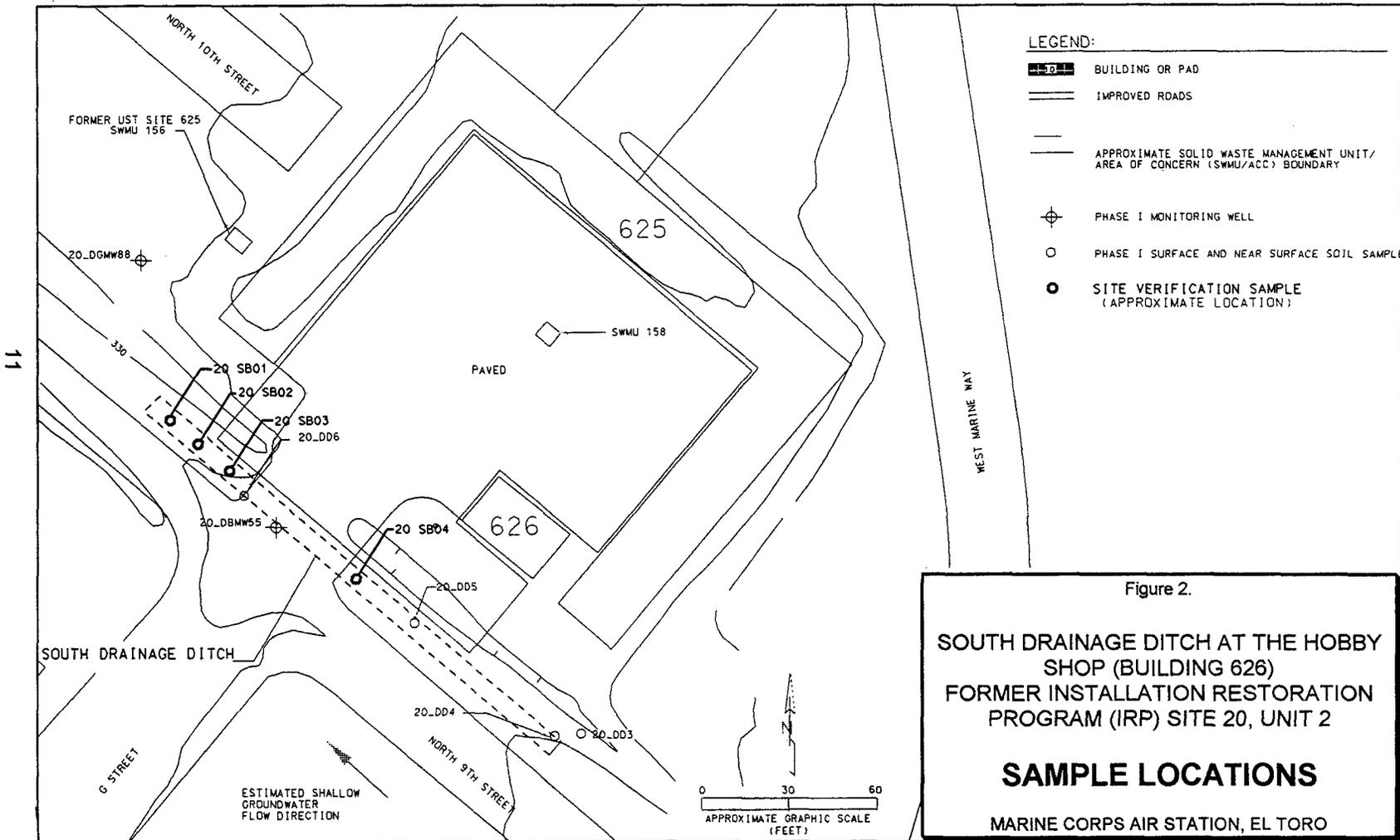
**TABLE 2. Groundwater Quality Beneath and Downgradient
 from the South Drainage Ditch at The Hobby Shop
 MCAS El Toro**

| Monitoring Well Identification Number/ Sampling Dates | Depth of Screened Interval (Feet Below Ground Surface (BGS)) | TPH (mg/kg) [Method 8015 Mod unless otherwise noted] | Benzene (B), Toluene (T), Ethylbenzene (E), and Xylenes (X) (all concentrations in milligrams/kilogram) |
|---|---|--|--|
| <p>20_DBMW55 <i>(at South Drainage Ditch)</i> 12 Sep 92 17 Jun 93 27 Feb 96 14 Nov 96 25 Mar 97</p> | <p>187-227</p> | <p>Not detected above stated reporting limits during 1992 and 1993 sampling rounds (JEG, 1994) Not analyzed during 1996 and 1997 sampling rounds (CDM, 1997)</p> | <p>Not detected above stated reporting limits (CDM, 1997)</p> |
| <p>20_DGMW88 <i>(approximately 50 feet from the northwest end of the South Drainage Ditch)</i> 11 Apr 92 17 Jun 93 1 Feb 96 25 Nov 96 20 Mar 97</p> | <p>185-225</p> | <p>Not detected above stated reporting limits during 1992 and 1993 sampling rounds (JEG, 1994) Not analyzed during 1996 and 1997 sampling rounds (CDM, 1997)</p> | <p>Not detected above stated reporting limits (CDM, 1997)</p> |



10

Figure 1.
SOUTH DRAINAGE DITCH AT THE HOBBY SHOP (BUILDING 626)
FORMER INSTALLATION RESTORATION PROGRAM (IRP) SITE 20, UNIT 2
VICINITY MAP
MARINE CORPS AIR STATION, EL TORO



11

SOUTHWESTNAVFACENCOM
CODE 56MC.LMH
SAN DIEGO, CALIFORNIA

Appendices

Appendix A

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

Petroleum Exclusion Documentation

Petroleum Exclusion Marine Corps Air Station, El Toro

The purpose of this document is to provide a record of the agreement reached by the Base Realignment and Closure (BRAC) Cleanup Team (BCT) during the conference call of 21 August 1996.

Based on the petroleum exclusion under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the BCT agrees to transfer the unit, consisting of a drainage ditch, listed below from the Installation Restoration Program to the Petroleum Corrective Action Program with the Regional Water Quality Control Board as the lead regulatory agency.

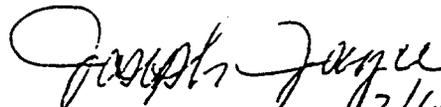
Site 20: Hobby Shop

Unit 2: Drainage Ditch

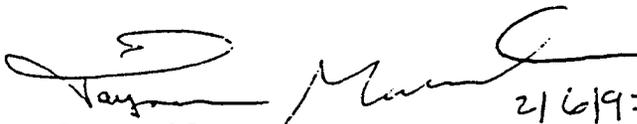
The undersigned agree with the above statements.


2/06/97

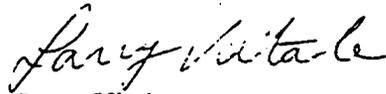
Glenn Kistner
U.S. Environmental Protection Agency, Region IX


2/6/97

Joseph Joyce
BRAC Environmental Coordinator
MCAS El Toro


2/6/97

Tayseer Mahmoud
California EPA, Department of Toxic Substances Control,
Region 4

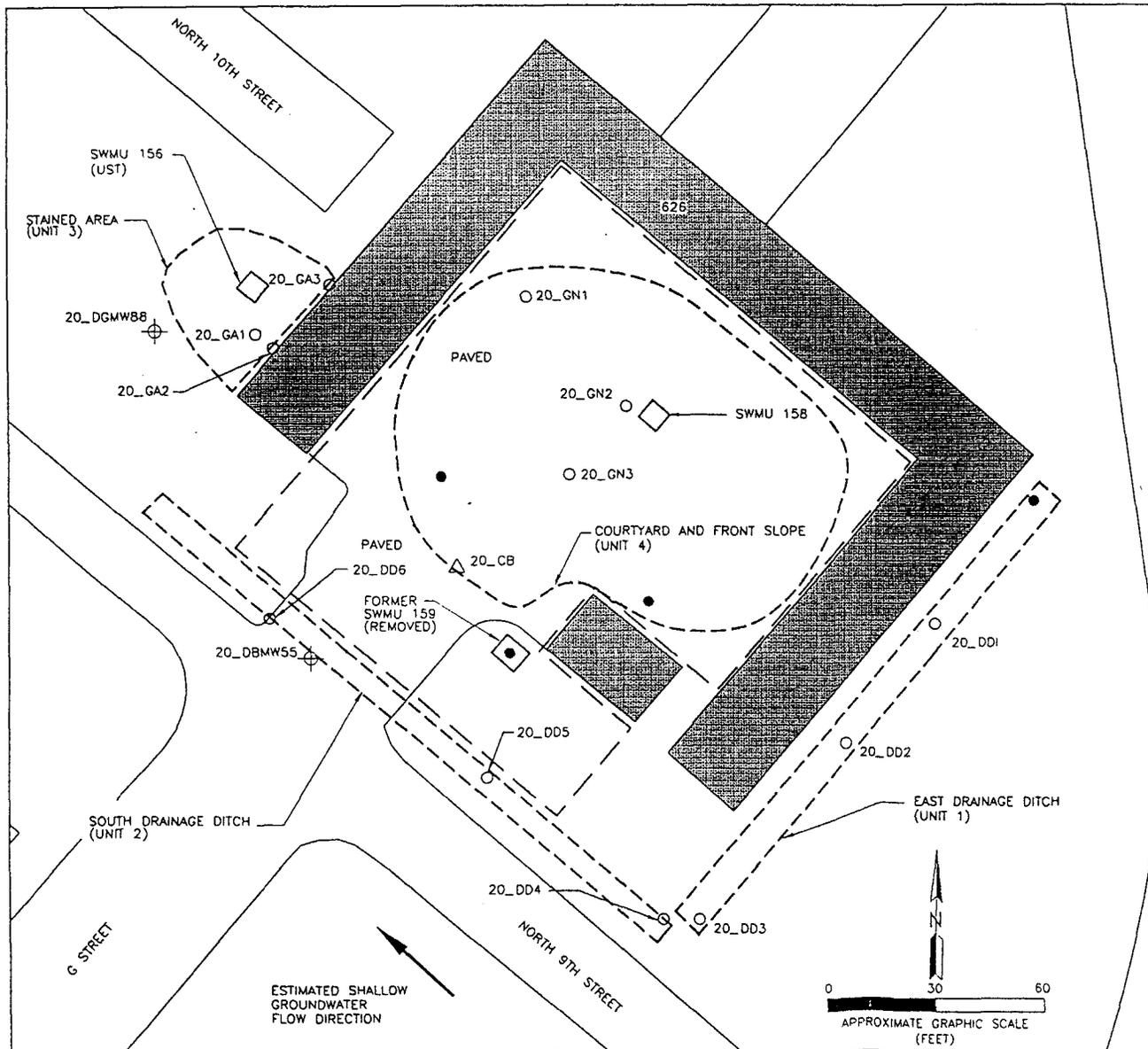


Larry Vitale
California Regional Water Quality Control Board,
Santa Ana Region

Appendix B

**Extracts from the Base Realignment and Closure Cleanup Plan (Marine Corps Air
Station, El Toro, 1995)**

IRP Site 20 Map



LEGEND:

- BUILDING OR PAD
- IMPROVED ROADS
- PHASE I STRATUM BOUNDARY
- PHASE II UNIT MODIFICATIONS
- SOLID WASTE MANAGEMENT UNIT/ AREA OF CONCERN (SWMU/AOC) BOUNDARY

EXISTING:

- PHASE I MONITORING WELL (RESULTS ON TABLES B20-3 AND B20-6 IN PHASE I T.M.)
- PHASE I SURFACE AND NEAR SURFACE SOIL SAMPLE (RESULTS ON TABLE B20-2 IN PHASE I T.M.)
- PHASE I SEDIMENT SAMPLE

PROPOSED:

- PHASE II SURFACE AND NEAR SURFACE SOIL SAMPLE

| | | |
|--|--------------|------------------|
| Southwest Division Naval Facilities Engineering Command | | |
| MCAS El Toro, CA | | |
| Site Plan Site 20 - Hobby Shop | | |
| File No 1036120 | Figure E-16a | Date 12/25/95 |

Appendix C

Extracts from the Final Report, Aerial Photograph Assessment, MCAS El Toro (SAIC, 1993)

Aerial Photographic Interpretation
 MCAS El Toro
 Santa Ana, California
 1968

Figure 10

Sheet 1 of 1

August 28, 1968

Photo Number 2400-4-5

Source: Map and Imagery Library,
 University of California, Santa Barbara

Prepared for:

Southwest Division

Naval Facilities Engineering Command

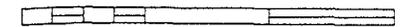
Contract N68711-92-D-4658

LEGEND:

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|--------|------------------|--------|---------------------|
| B | Building | IM | Impoundment |
| D | Drums | LQ | Liquid |
| DB | Debris | LT | Light-Toned |
| DG | Disturbed Ground | M | Material |
| DK | Dark-Toned | MM | Mounded Material |
| EX | Excavation | OS | Open Storage |
| EXT | Extraction | R | Refuse |
| FA | Fill Area | ST | Stain |
| FBR | Fuel Bladder | TR | Trench |
| | Revetment | UO | Unidentified Object |
| GR | Graded Area | VT | Vertical Tank |
| GS | Ground Scar | WS | Wet Soil |
| HT | Horizontal Tank | | |

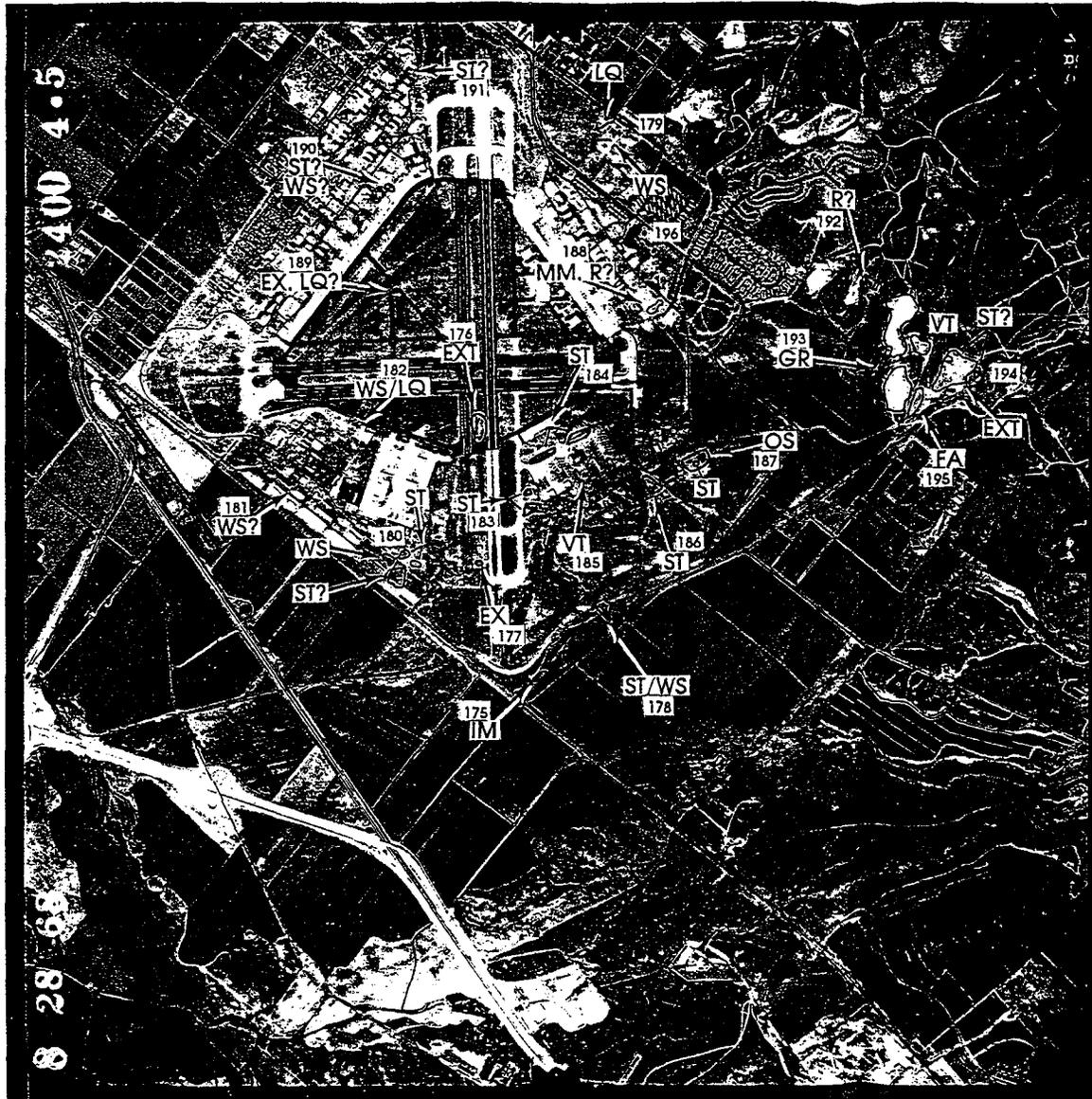


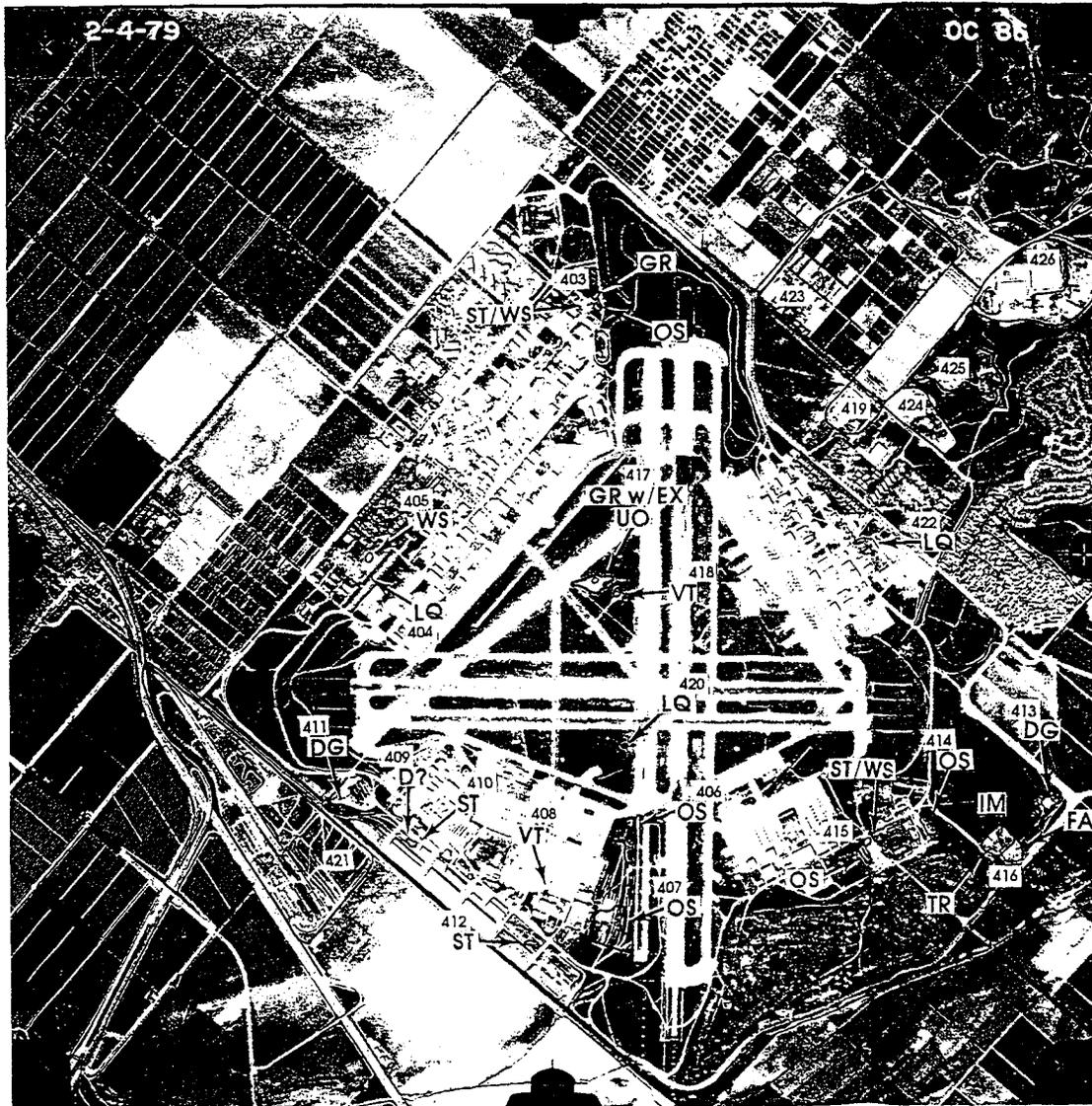
2000' 0 2000' 4000'



1" = 2000'

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Aerial Photographic Interpretation
 MCAS El Toro
 Santa Ana, California

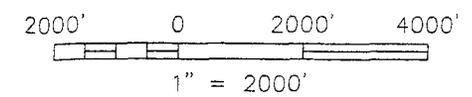
1979
 Figure 18
 Sheet 1 of 1

February 4, 1979
 Photo Number M79-OC-86
 Source: Brewster Pacific Corporation, Pasadena
 (Reproduced by Permission)

Prepared for:
 Southwest Division
 Naval Facilities Engineering Command
 Contract N68711-92-D-4658

LEGEND:

| SYMBOL | DESCRIPTION | SYMBOL | DESCRIPTION |
|--------|------------------|--------|---------------------|
| B | Building | IM | Impoundment |
| D | Drums | LQ | Liquid |
| DB | Debris | LT | Light-Toned |
| DG | Disturbed Ground | M | Material |
| DK | Dark-Toned | MM | Mounded Material |
| EX | Excavation | OS | Open Storage |
| EXT | Extraction | R | Refuse |
| FA | Fill Area | ST | Stain |
| FBR | Fuel Bladder | TR | Trench |
| | Revetment | UO | Unidentified Object |
| GR | Graded Area | VT | Vertical Tank |
| GS | Ground Scar | WS | Wet Soil |
| HT | Horizontal Tank | | |

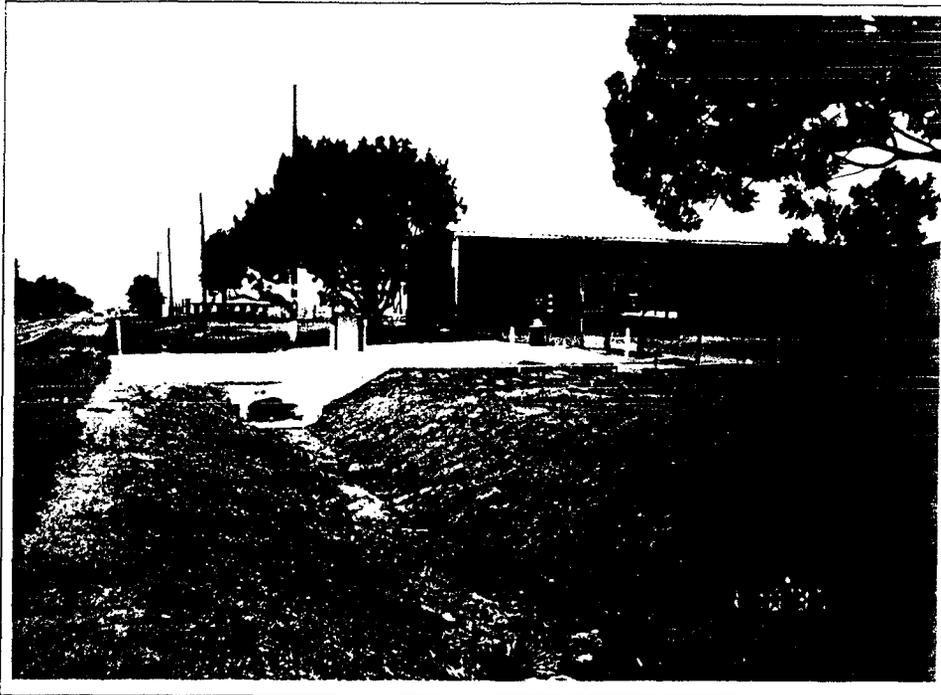


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Appendix D

Site Photographs and Laboratory Test Reports (1997)

SOUTH DRAINAGE DITCH AT THE HOBBY SHOP
PETROLEUM CORRECTIVE ACTION PROGRAM
MARINE CORPS AIR STATION, EL TORO, CALIFORNIA



Photograph 1. South Drainage Ditch at the Hobby Shop, looking northwest.
Hobby Shop at right side of photograph.
Date of photograph: 1997.



Photograph 2. Erosion along South Drainage Ditch at the Hobby Shop
near Soil Borings 20_DD6 and 20 SB03.
Date of photograph: 1997.

CHAIN-OF-CUSTODY RECORD

O.H. MATERIALS CORP. • P.O. BOX 551 • FINDLAY, OH 45839-0551 • 419-423-3526

| PROJECT NAME L.A.D. IRP 20 | | PROJECT LOCATION M.C.A.S EL TORO | | NUMBER OF CONTAINERS | ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) TPH-EXTRACTABLE TPH-EXTRACTABLE 2020 E MAX TORRANCE, CA. REMARKS | | | | | | | | | | | | |
|--|--|--|-------------|----------------------|--|--|----------|----------|----------|----------|--|--|--|--|--|--|--|
| PROJ. NO. 18292 | PROJECT CONTACT THIZAR TINTUT-Williams | PROJECT TELEPHONE NO. (714) 263-1146 X620 | | | | | | | | | | | | | | | |
| CLIENT'S REPRESENTATIVE LYNN HORNECKER - SMDIV | | PROJECT MANAGER/SUPERVISOR Bill SEDLAK - OHM | | | | | | | | | | | | | | | |
| ITEM NO. | SAMPLE NUMBER | DATE | TIME | COMP | GRAB | SAMPLE DESCRIPTION (INCLUDE MATRIX AND POINT OF SAMPLE) | | | | | | | | | | | |
| 1 | 18292-IRP20-470 | 11/2/97 | 1406 | | X | SB-04 @ 4.5 | 1 | X | X | X | | | | | | | |
| 2 | 18292-IRP20-481 | 11/2/97 | 1300 | | X | RINSTATE FOR 6/12/97 | 5 | X | X | X | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | |

| TRANSFER NUMBER | ITEM NUMBER | TRANSFERS RELINQUISHED BY | TRANSFERS ACCEPTED BY | DATE | TIME | REMARKS |
|-----------------|-------------|---------------------------|-----------------------|----------|-------|---|
| 1 | 1 to 2 | <i>Mark Remond</i> | <i>Bill Sedlak</i> | 11/12/97 | 12:55 | 1) 5 DAY T.A.T. ← OK |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | SAMPLER'S SIGNATURE <i>Mark Remond</i> |

OHM REMEDIATION SERVICES CORP.
Western Region
Southern California Division

2031 Main Street
Irvine, CA 92614-6509
(714)263-9124, ext. 525
FAX (714)475-5433

FACSIMILE TRANSMISSION COVER SHEET

| | |
|--|-------------------------|
| Facsimile Telephone No: | _____ |
| ATTN: | <u>Cecilia Chavez</u> |
| Company: | <u>EMAX</u> |
| FROM: | <u>Dwayne Y. Ishida</u> |
| Date: | <u>6/19/97</u> |
| Number of Pages (including cover sheet): | <u>1</u> |

MESSAGE: Cecilia,
For your records, per our telephone conversation, please add SPLP (1312) and TEPH analysis for sample 18292-IRP20-473 (F071-04) on a 5-day turnaround. Thanks again for the quick turnaround.
Dwayne

If you do not receive all pages indicated, please contact office at (714) 263-9124.

-ATTENTION-

This transmission is intended only for the use of the individual or entity to which it is addressed, and may contain information that is privileged, confidential, and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, you are hereby notified that any dissemination, distribution, or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and return the original message to us at the above address via the U.S. Postal Services. Thank you.

EPA METHOD M8015
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
CLIENT:      OHM Remediation Services          DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50           DATE RECEIVED:  06/12/97
BATCH NO.:  97F071                           DATE EXTRACTED: 06/13/97
MATRIX:     SOIL                              DATE ANALYZED:  06/16/97
=====
  
```

| SAMPLE ID | CONTROL NO | RESULT (mg/kg) | H-C RANGE | % RECOVERY | | DL FACTOR | MOIST (%) | PRL (mg/kg) |
|-----------------|------------|-------------------|--------------|------------|-------|--------------|--------------|----------------|
| | | | | SURR1 | SURR2 | | | |
| 18292-IRP20-470 | F071-01 | ND | N.A. | 103 | 116 | 1 | 8.6 | 10.94 |
| 18292-IRP20-471 | F071-02 | ND | N.A. | 101 | 114 | 1 | 16.7 | 12 |
| 18292-IRP20-472 | F071-03 | 13 | C14-C26 | 100 | 111 | 1 | 15.7 | 11.86 |
| 18292-IRP20-473 | F071-04 | 220 | C14-C33 | 98 | 106 | 1 | 5.4 | 10.57 |
| 18292-IRP20-474 | F071-05 | ND | N.A. | 97 | 109 | 1 | 14.3 | 11.67 |
| 18292-IRP20-475 | F071-06 | 61 | C16-C31 | 99 | 106 | 1 | 6.3 | 10.67 |
| 18292-IRP20-476 | F071-07 | 44 | C17-C30 | 97 | 106 | 1 | 10.5 | 11.17 |
| 18292-IRP20-477 | F071-08 | ND | N.A. | 100 | 111 | 1 | 15.5 | 11.83 |
| 18292-IRP20-478 | F071-09 | ND | N.A. | 100 | 109 | 1 | 1.3 | 10.13 |
| 18292-IRP20-479 | F071-10 | 71 | C18-C32 | 98 | 105 | 1 | 11.8 | 11.34 |
| 18292-IRP20-480 | F071-11 | ND | N.A. | 101 | 112 | 1 | 16.7 | 12 |
| MBLK1S | DSF019SB | ND | N.A. | 100 | 112 | 1 | NA | 10 |

```

QC LIMIT:
SURR1 : Bromobenzene          60-140
SURR2 : Hexacosane           55-150
PRL   : Project Reporting Limit
H-C RANGE: C10-C15 = JP5
          C6-C12  = Gas
          C10-C24 = Diesel
          C18-C34 = Motor Oil
DATE ANALYZED: 06/13/97 for DSF019SB
               06/16/97 F071-01 & F071-02
  
```

EPA 5030/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

```

=====
CLIENT:      OHM Remediation Services          DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50           DATE RECEIVED:  06/12/97
BATCH NO.:  97F071                           DATE EXTRACTED: 06/13/97
MATRIX:     SOIL                              DATE ANALYZED:  06/13/97
=====
  
```

| SAMPLE ID | CONTROL NO | RESULT (mg/kg) | % RECOVERY SURR | DL FACTOR | MOIST (%) | PRL (mg/kg) |
|-----------------|------------|-------------------|--------------------|--------------|--------------|----------------|
| 18292-IRP20-470 | F071-01 | ND | 92 | 1 | 8.6 | 10.94 |
| 18292-IRP20-471 | F071-02 | ND | 82 | 1 | 16.7 | 12 |
| 18292-IRP20-472 | F071-03 | ND | 91 | 1 | 15.7 | 11.86 |
| 18292-IRP20-473 | F071-04 | ND | 97 | 1 | 5.4 | 10.57 |
| 18292-IRP20-474 | F071-05 | ND | 93 | 1 | 14.3 | 11.67 |
| 18292-IRP20-475 | F071-06 | ND | 94 | 1 | 6.3 | 10.67 |
| 18292-IRP20-476 | F071-07 | ND | 93 | 1 | 10.5 | 11.17 |
| 18292-IRP20-477 | F071-08 | ND | 86 | 1 | 15.5 | 11.83 |
| 18292-IRP20-478 | F071-09 | ND | 80 | 1 | 1.3 | 10.13 |
| 18292-IRP20-479 | F071-10 | ND | 85 | 1 | 11.8 | 11.34 |
| 18292-IRP20-480 | F071-11 | ND | 94 | 1 | 16.7 | 12 |
| MBLK1S | VAF1035B | ND | 99 | 1 | NA | 10 |

QC LIMIT:
 SURR : Bromofluorobenzene
 PRL : Project Reporting Limit

60-140

EPA 5030/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE & TRAP

```

=====
CLIENT:      OHM Remediation Services          DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50           DATE RECEIVED:  06/12/97
BATCH NO.:   97F071                          DATE EXTRACTED: 06/16/97
MATRIX:      WATER                            DATE ANALYZED:  06/16/97
=====
  
```

| SAMPLE ID | CONTROL NO | RESULT (mg/L) | % RECOVERY SURR | DILUTION FACTOR | PRL (mg/L) |
|-----------------|------------|------------------|--------------------|--------------------|---------------|
| 18292-IRP20-481 | F071-12 | ND | 98 | 1 | .1 |
| MBLK1W | VAF1135B | ND | 100 | 1 | .1 |

QC LIMIT: 65-135
 SURR : Bromofluorobenzene
 PRL : Project Reporting Limit

EPA METHOD 8020
BTEX

```

=====
CLIENT:      OHM Remediation Services      DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:  06/12/97
BATCH NO.:   97F071                       DATE EXTRACTED: 06/13/97
SAMPLE ID:   18292-IRP20-470             DATE ANALYZED:  06/13/97
CONTROL NO.: F071-01                     MATRIX:         SOIL
% MOISTURE:  8.6                         DILUTION FACTOR: 1
=====

```

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|-------------------------|--------------------|----------------|
| Benzene | ND | 5.47 |
| Toluene | ND | 5.47 |
| Ethylbenzene | ND | 5.47 |
| Total Xylenes | ND | 16.4 |
| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
| 1-Bromo-4-fluorobenzene | 77 | 50-150 |

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

=====

| | | | |
|--------------|--------------------------|------------------|----------|
| CLIENT: | OHM Remediation Services | DATE COLLECTED: | 06/12/97 |
| PROJECT: | 18292/El Toro/D.O. 50 | DATE RECEIVED: | 06/12/97 |
| BATCH NO.: | 97F071 | DATE EXTRACTED: | 06/13/97 |
| SAMPLE ID: | 18292-IRP20-471 | DATE ANALYZED: | 06/13/97 |
| CONTROL NO.: | F071-02 | MATRIX: | SOIL |
| % MOISTURE: | 16.7 | DILUTION FACTOR: | 1 |

=====

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 6 |
| Toluene | ND | 6 |
| Ethylbenzene | ND | 6 |
| Total Xylenes | ND | 18 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 68 | 50-150 |

=====

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

=====

| | | | |
|--------------|--------------------------|------------------|----------|
| CLIENT: | OHM Remediation Services | DATE COLLECTED: | 06/12/97 |
| PROJECT: | 18292/El Toro/D.O. 50 | DATE RECEIVED: | 06/12/97 |
| BATCH NO.: | 97F071 | DATE EXTRACTED: | 06/13/97 |
| SAMPLE ID: | 18292-IRP20-472 | DATE ANALYZED: | 06/13/97 |
| CONTROL NO.: | F071-03 | MATRIX: | SOIL |
| % MOISTURE: | 15.7 | DILUTION FACTOR: | 1 |

=====

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 5.93 |
| Toluene | ND | 5.93 |
| Ethylbenzene | ND | 5.93 |
| Total Xylenes | ND | 17.8 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 76 | 50-150 |

=====

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

=====

| | | | |
|--------------|--------------------------|------------------|----------|
| CLIENT: | OHM Remediation Services | DATE COLLECTED: | 06/12/97 |
| PROJECT: | 18292/El Toro/D.O. 50 | DATE RECEIVED: | 06/12/97 |
| BATCH NO.: | 97F071 | DATE EXTRACTED: | 06/13/97 |
| SAMPLE ID: | 18292-IRP20-473 | DATE ANALYZED: | 06/13/97 |
| CONTROL NO.: | F071-04 | MATRIX: | SOIL |
| % MOISTURE: | 5.4 | DILUTION FACTOR: | 1 |

=====

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 5.29 |
| Toluene | ND | 5.29 |
| Ethylbenzene | ND | 5.29 |
| Total Xylenes | ND | 15.9 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 78 | 50-150 |

=====

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

=====

| | | | |
|--------------|--------------------------|------------------|----------|
| CLIENT: | OHM Remediation Services | DATE COLLECTED: | 06/12/97 |
| PROJECT: | 18292/El Toro/D.O. 50 | DATE RECEIVED: | 06/12/97 |
| BATCH NO.: | 97F071 | DATE EXTRACTED: | 06/13/97 |
| SAMPLE ID: | 18292-IRP20-474 | DATE ANALYZED: | 06/13/97 |
| CONTROL NO.: | F071-05 | MATRIX: | SOIL |
| % MOISTURE: | 14.3 | DILUTION FACTOR: | 1 |

=====

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 5.83 |
| Toluene | ND | 5.83 |
| Ethylbenzene | ND | 5.83 |
| Total Xylenes | ND | 17.5 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 77 | 50-150 |

=====

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

```

=====
CLIENT:      OHM Remediation Services      DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:  06/12/97
BATCH NO.:  97F071                       DATE EXTRACTED: 06/13/97
SAMPLE ID:   18292-IRP20-475             DATE ANALYZED:  06/13/97
CONTROL NO.: F071-06                    MATRIX:         SOIL
% MOISTURE:  6.3                        DILUTION FACTOR: 1
=====

```

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|-------------------------|--------------------|----------------|
| Benzene | ND | 5.34 |
| Toluene | ND | 5.34 |
| Ethylbenzene | ND | 5.34 |
| Total Xylenes | ND | 16 |
| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
| 1-Bromo-4-fluorobenzene | 79 | 50-150 |

=====

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

```

=====
CLIENT:      OHM Remediation Services      DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:  06/12/97
BATCH NO.:  97F071                        DATE EXTRACTED: 06/13/97
SAMPLE ID:   18292-IRP20-476              DATE ANALYZED:  06/13/97
CONTROL NO.: F071-07                      MATRIX:         SOIL
% MOISTURE:  10.5                          DILUTION FACTOR: 1
=====

```

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 5.59 |
| Toluene | ND | 5.59 |
| Ethylbenzene | ND | 5.59 |
| Total Xylenes | ND | 16.8 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 77 | 50-150 |

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

=====

| | | | |
|--------------|--------------------------|------------------|----------|
| CLIENT: | OHM Remediation Services | DATE COLLECTED: | 06/12/97 |
| PROJECT: | 18292/El Toro/D.O. 50 | DATE RECEIVED: | 06/12/97 |
| BATCH NO.: | 97F071 | DATE EXTRACTED: | 06/13/97 |
| SAMPLE ID: | 18292-IRP20-477 | DATE ANALYZED: | 06/13/97 |
| CONTROL NO.: | F071-08 | MATRIX: | SOIL |
| % MOISTURE: | 15.5 | DILUTION FACTOR: | 1 |

=====

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 5.92 |
| Toluene | ND | 5.92 |
| Ethylbenzene | ND | 5.92 |
| Total Xylenes | ND | 17.8 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 71 | 50-150 |

=====

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

```
=====
CLIENT:      OHM Remediation Services      DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:  06/12/97
BATCH NO.:   97F071                       DATE EXTRACTED: 06/13/97
SAMPLE ID:   18292-IRP20-478             DATE ANALYZED:  06/13/97
CONTROL NO.: F071-09                     MATRIX:         SOIL
% MOISTURE:  1.3                          DILUTION FACTOR: 1
=====
```

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 5.07 |
| Toluene | ND | 5.07 |
| Ethylbenzene | ND | 5.07 |
| Total Xylenes | ND | 15.2 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 68 | 50-150 |

=====
PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

=====

| | | | |
|--------------|--------------------------|------------------|----------|
| CLIENT: | OHM Remediation Services | DATE COLLECTED: | 06/12/97 |
| PROJECT: | 18292/El Toro/D.O. 50 | DATE RECEIVED: | 06/12/97 |
| BATCH NO.: | 97F071 | DATE EXTRACTED: | 06/13/97 |
| SAMPLE ID: | 18292-IRP20-479 | DATE ANALYZED: | 06/13/97 |
| CONTROL NO.: | F071-10 | MATRIX: | SOIL |
| % MOISTURE: | 11.8 | DILUTION FACTOR: | 1 |

=====

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 5.67 |
| Toluene | ND | 5.67 |
| Ethylbenzene | ND | 5.67 |
| Total Xylenes | ND | 17 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 71 | 50-150 |

=====

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

```

=====
CLIENT:      OHM Remediation Services      DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:  06/12/97
BATCH NO.:  97F071                        DATE EXTRACTED: 06/13/97
SAMPLE ID:  18292-IRP20-480              DATE ANALYZED:  06/13/97
CONTROL NO.: F071-11                      MATRIX:         SOIL
% MOISTURE: 16.7                          DILUTION FACTOR: 1
=====

```

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|---------------|--------------------|----------------|
| Benzene | ND | 6 |
| Toluene | ND | 6 |
| Ethylbenzene | ND | 6 |
| Total Xylenes | ND | 18 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 76 | 50-150 |

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

```

=====
CLIENT:      OHM Remediation Services      DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:  06/12/97
BATCH NO.:  97F071                       DATE EXTRACTED: 06/16/97
SAMPLE ID:  18292-IRP20-481             DATE ANALYZED:  06/16/97
CONTROL NO.: F071-12                   MATRIX:         WATER
% MOISTURE:  NA                         DILUTION FACTOR: 1
=====

```

| PARAMETERS | RESULTS (ug/L) | PRL (ug/L) |
|---------------|-------------------|---------------|
| Benzene | ND | .3 |
| Toluene | .6 | .3 |
| Ethylbenzene | .3 | .3 |
| Total Xylenes | 1.2 | 1 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 81 | 60-140 |

PRL: Project Reporting Limit
Will be confirmed by the second column.

EPA METHOD 8020
BTEX

```

=====
CLIENT:      OHM Remediation Services      DATE COLLECTED:  NA
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:   NA
BATCH NO.:  97F071                        DATE EXTRACTED: 06/13/97
SAMPLE ID:   MBLK1S                        DATE ANALYZED:  06/13/97
CONTROL NO.: VAF1035B                      MATRIX:          SOIL
% MOISTURE:  NA                            DILUTION FACTOR: 1
=====

```

| PARAMETERS | RESULTS (ug/kg) | PRL (ug/kg) |
|-------------------------|--------------------|----------------|
| Benzene | ND | 5 |
| Toluene | ND | 5 |
| Ethylbenzene | ND | 5 |
| Total Xylenes | ND | 15 |
| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
| 1-Bromo-4-fluorobenzene | 82 | 50-150 |

PRL: Project Reporting Limit

EPA METHOD 8020
BTEX

```
=====
CLIENT:      OHM Remediation Services      DATE COLLECTED:  NA
PROJECT:     18292/El Toro/D.O. 50        DATE RECEIVED:   NA
BATCH NO.:   97F071                       DATE EXTRACTED:  06/16/97
SAMPLE ID:   MBLK1W                       DATE ANALYZED:   06/16/97
CONTROL NO.: VAF1135B                     MATRIX:          WATER
% MOISTURE:  NA                           DILUTION FACTOR: 1
=====
```

| PARAMETERS | RESULTS (ug/L) | PRL (ug/L) |
|---------------|-------------------|---------------|
| Benzene | ND | .3 |
| Toluene | ND | .3 |
| Ethylbenzene | ND | .3 |
| Total Xylenes | ND | 1 |

| SURROGATE PARAMETER | % RECOVERY | QC LIMIT |
|-------------------------|------------|----------|
| 1-Bromo-4-fluorobenzene | 82 | 60-140 |

=====
PRL: Project Reporting Limit

EPA METHOD SPLP/M8015
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

```

=====
CLIENT:      OHM Remediation Services          DATE COLLECTED: 06/12/97
PROJECT:     18292/El Toro/D.O. 50           DATE RECEIVED:  06/19/97
BATCH NO.:  97F071A                          DATE EXTRACTED: 06/19/97
MATRIX:     WATER                            DATE ANALYZED:  06/22/97
=====
  
```

| SAMPLE ID | CONTROL NO | RESULT (mg/L) | H-C RANGE | % RECOVERY | | DL FACTOR | PRL (mg/L) |
|----------------|------------|------------------|--------------|------------|-------|--------------|---------------|
| | | | | SURR1 | SURR2 | | |
| 18292-IRP20-47 | F071-04 | .20 | C10-C25 | 86 | 102 | 1 | .1 |
| MBLK1S2W | TXF001SB | ND | N.A. | 88 | 104 | 1 | .1 |
| MBLK1W | DSF033WB | ND | N.A. | 67 | 82 | 1 | .1 |

```

GC LIMIT:
SURR1 : Bromobenzene          65-135
SURR2 : Hexacosane           60-140
PRL   : Project Reporting Limit
DATE ANALYZED: 06/21/97 for DSF033WB
  
```