CLOSURE REPORT
TEMPORARY ACCUMULATION AREA (TAA) 651A
MARINE CORPS AIR STATION
EL TORO, CALIFORNIA

Environmental Remedial Action
Contract No. N62474-98-D-2076
Contract Task Order 0024

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Abbreviations and Acronyms

BNI	Bechtel National Inc.
BRAC	Base Realignment and Closure
CA LUFT	California Leaking Underground Fuel Tank
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CRDL	contract required detection limit
DSA	drum storage area
DTSC	Department of Toxic Substances Control
EPA	United States Environmental Protection Agency
HI	hazard index
HSP	Health and Safety Plan
JEG	Jacobs Engineering Group Inc.
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LDC	Laboratory Data Consultants
m/z	mass-to-change
MCAS	Marine Corps Air Station
MDL	method detection limit
mg/kg	milligram per kilogram
MS	matrix spike
MSD	matrix spike duplicate
NFA	no further action
OHM	OHM Remediation Services Corp.
PR	preliminary review
PRG	Preliminary Remediation Goal
QA	quality assurance
QC	quality control
RCRA	Resource Conservation and Recovery Act
RDL	reporting detection limit
RFA	RCRA facility assessment
RPD	relative percent difference
RRF	relative response factor
SIM	selected ion monitoring
SVOC	semivolatile organic compound
SWDIV	Southwest Division Naval Facilities Engineering Command
SWMU	Solid Waste Management Unit
TAA	temporary accumulation area
TCL	target analyte compound
TPH	total petroleum hydrocarbons
VOC	volatile organic compound
VSI	Visual Site Inspection

Abbreviations and Acronyms (Cont.)

%D	percent difference
%R	percent recovery
µg/kg	micrograms per kilogram

1.0 Introduction

This addendum to summary report was prepared to present the results of sampling beneath sump located adjacent to former Temporary Accumulation Area (TAA) 651A, between former TAA 651A and the former air compressor shed. The sump was visually inspected be the representatives of the Navy and Department of Toxic Substance Control (DTSC) on September 19, 2002 and during the inspection the Navy agreed to collect samples beneath or near the sump. The soil samples were collected on November 12, 2002.

This report summarizes the results of confirmation soil sampling activities performed at the former TAA 651A Site at the former Marine Corps Air Station (MCAS) El Toro (hereinafter referred to as the "Station"), California. IT Corporation (IT) performed the work for the Southwest Division Naval Facilities Engineering Command (SWDIV) under EFA West Contract No. N62474-98-D-2076, Contract Task Order (CTO) 0024.

The Station is located approximately 45 miles southeast of the city of Los Angeles in Orange County, California, 1 mile north of the intersection of Interstate 5 (Santa Ana) and Interstate 405 (San Diego) freeways. The Station covers approximately 4,738 acres. The location of Former TAA 651A on the Station is shown in Figure 1-1.

Former TAA 651A is located in the northwestern quadrant of the station, at the intersection of North 4th Street and C Street. Former TAA 651A is located on the loading dock on the southwest side of Building 651.

TAA 651A was identified as Solid Waste Management Unit (SWMU) 165, a drum storage area during Resource Conservation and Recovery Act Facility Assessment (RFA). Approximately 12x12 feet metal storage shed was placed on the concrete ramp with 6" berms around.

In October 2001, a *Summary Report, Former Temporary Accumulation Area (TAA) Number 651A, Marine Corps Air Station, El Toro, California* was submitted to the DTSC Region 4. A copy of the TAA 651A report is provided in Appendix A. This TAA 651A (SWMU 165) Summary report presents all the historical background information pertaining to TAA 651A and information collected during previous environmental restoration program projects.

During a site visit to various TAA sites in August and September 2002 representatives from SWDIV, Station, IT and the DTSC visited former TAA 651A site and during the site visit it was mutually agreed to remove soil from the drainage sump located in the middle of the loading dock and next to former TAA 651A berm area to visually inspect the bottom of the sump. After

removal of soil from bottom of the sump, DTSC and Station representatives visually inspected the integrity of sump and observed that it was a blind sump with no cracks or evidence of any spills. So, it was agreed that one hand auger soil boring should be advanced at the bottom of the sump to collect soil samples at 18 and 36 inches below ground surface.

This addendum report includes an evaluation of analytical results from recent soil sampling activities and screening level risk assessment for TAA 651A site.

Based on the confirmation soil sampling data and the results of the risk assessment calculations, which resulted in net carcinogenic risk of less than 10^{-6} for the residential scenario and the industrial scenario for TAA 651A (SWMU 165) site. Also, the summed non-cancer hazard index for soil under the potential future residential scenario ~~after subtracting background~~ was less than 1.0. Therefore, former TAA 651A (SWMU 165) should be identified as "closed" in next Base Realignment and Closure Business Plan Update.

The Station closed on 1 July 1999 in accordance with the Base Realignment and Closure Act of 1993 (BRAC III). Former TAA 651A is located within a parcel designated for future use as education area according to the Great Park Land Use Plan that was issued by the City of Irvine in June 2002. The Great Park Land Use Plan is provided in Appendix B.

1.1 Regulatory Background and Cleanup Goals

The closure activities at former TAA 651A were completed in accordance with the appropriate federal and state requirements. Former TAA 651A is characterized as "*hazardous waste accumulation areas*" according to the Code of Federal Regulations (CFR), Title 40, Part 262.34, and the California Code of Regulations (CCR), Title 22, Section 66262.34. Because hazardous wastes have been stored at the site, closure of former TAA 651A is also subject to federal and state regulations for closure of less than 90 days hazardous waste management facilities (CFR 40, part 264, Subpart G; and CCR 22, Section 66264, Article 7, respectively).

The cleanup goals established for former TAA 651A are based on the following:

Soil

- United States Environmental Protection Agency (EPA) Region IX Preliminary Remediation Goals (PRGs) dated November 1, 2002 for residential land use for organic contaminants
- Background concentrations for metals contaminants (Bechtel National Inc. [BNI], 1996b)
- 5,000-milligrams per kilogram (mg/kg) concentration limit for total petroleum hydrocarbons (TPH)-purgeable
- 10,000-mg/kg concentration limit for TPH-extractable.

2.0 Field Activities

The following subsections describe the field activities that were performed by IT at former TAA 651A. Field activities were conducted in accordance with the approved *Final Supplemental Work Plan* (OHM, 1997a) and approved *Revised Addendum to the Draft Supplemental Work Plan, Marine Corps Air Station El Toro, California* (IT, 2002). Field activities conducted at former TAA 651A included confirmation soil sampling, land surveying and waste management.

2.1 Confirmation Soil Sampling

Per August and September 2002 site visit, two confirmation soil samples were collected on November 12, 2002, from one hand-auger location, from the bottom of the sump, located on the loading dock area. The location of the hand-auger boring is provided on Figure 2-1. A photo log of TAA 651A is included in Appendix C.

Soil samples were collected in standard stainless steel sleeves at two different depths: 18 and 36 inches below ground surface. Details on the analytical methods, laboratory results, data quality assessment, and data validation are discussed in Section 3. Field quality assurance/quality control samples were collected and are also discussed in Section 3.

2.2 Land Surveying

After completing the confirmation soil sampling at former TAA 651A, the hand-auger soil boring location was surveyed by CalVada Surveying Inc., a California-licensed land surveyor. The surveyed locations were measured to ±0.01 foot horizontally and tied to the California State Plane Coordinate Systems, North American Datum 1983. The surveyed elevations were measured to ±0.01 foot vertically and tied to mean sea level datum. The land surveying data for former TAA 651A are presented as Appendix D.

2.3 Waste Management

Soil collected the bottom of the drainage sump was removed and placed in one, 55-gallon Department of Transportation Drum. After sampling of the soil for off-site disposal, one drum from TAA 651A site was sent off-site with other soil drums of other TAA sites to an RCRA-approved Crosby and Overton facility in Long Beach, California. A copy of the waste manifest is included in Appendix E.

3.0 Sampling Analytical Results and Data Quality Assessment

The objective of confirmation soil sampling and selected analytical methods was to provide analytical data to characterize the soil condition adjacent to former TAA 651A. The sampling methodology, analytical methods, analytical results, and interpretation of confirmation soil sampling have been performed in accordance with the analytical strategy presented in the DTSC-approved *Final Supplemental Work Plan* (OHM, 1997a) and approved *Revised Addendum to the Draft Supplemental Work Plan, Marine Corps Air Station El Toro, California* (IT, 2002) and are described in the following text.

The laboratory analyses were performed according to test methods specified in EPA Solid Waste-846 (Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods, June 1997) and California Leaking Underground Fuel Tank (CA LUFT) Manual (State Water Resources Control Board, 1989). The test methods used for analyses were selected on the basis of their ability to detect the chemicals of potential concern with suitable detection limits to verify that there was no release of chemicals at former TAA 651A and to provide data for assessment of risk to human health and the environment. A list of all the analytical methods that were performed for former TAA 651A is provided in Section 3.2.

All samples were analyzed by EMAX Laboratories, Inc., which is a State of California-certified and Naval Facilities Engineering Services Center-approved analytical laboratory.

3.1 Field Sampling Summary

3.1.1 Confirmation Soil Sampling

The sampling strategy for former TAA 651A focused on two aspects of the site: possible releases on the sub surface of the TAA or possible releases into the soil surrounding the TAA. Soil samples were collected and analyzed for the constituents contained in the wastes that may have been stored at former TAA 651A.

A concrete coring machine was used to core a 6-inch hole at the bottom of the 18-inch thick concrete sump. A total of 2 confirmation soil samples (sample numbers 818655-B3106 and 818655-B3107) were collected from the bottom of the sump at former TAA 651A from one hand auger boring.

A hand auger was used to bore into the soil under the concrete to approximately 36 inches. Soil samples were collected at 18 and 36 inches below ground surface using a hammer-driven split

core sampler that contained a stainless steel sleeve. Following the collection of the soil samples, the excess soil was placed back in the open boreholes (no airborne volatile organic compounds (VOCs) were identified by the photoionization detector). The surface was then finished to match the existing ground surface.

3.1.2 Quality Control

Field quality assurance/quality control (QA/QC) samples were collected at the TAA site as follows:

- Equipment rinsate samples were collected at a frequency of 1 per day.
- Trip blank samples were collected at a frequency of 1 per sample cooler for coolers containing samples for volatile analysis.

One equipment rinsate sample (sample number 818655-B3111) and one trip blank (sample number 818655-B3105) were collected on November 12, 2002.

EMAX Laboratories, Inc. performed the following laboratory QA/QC sample analysis:

- Laboratory control sample/sample duplicate analysis was performed at a frequency of 1 sample per batch.
- Laboratory matrix spike/spike duplicate sample analysis was performed at a frequency of 1 per 20 samples or per batch.
- Laboratory method blank analysis was performed at a frequency of 1 per batch.

3.1.3 Equipment Decontamination

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

3.2 Analytical Methods

Analytical methods were selected to encompass all the chemicals of potential concern at former TAA 651A. The following methods were performed to characterize samples collected from former TAA 651A:

- Volatile organic compounds (VOCs) by EPA Method 5035/8260B
- Semivolatile organic compounds (SVOCs) by EPA Method 8270C
- Total petroleum hydrocarbons (TPH) as gasoline by EPA Method 5035 and CA LUFT 8015 Modified
- TPH as diesel by CA LUFT 8015 Modified (extraction)
- Pesticides EPA Method 8081A
- Metals by EPA Method 6010B/7000.

Additionally, the Selected Ion Monitoring (SIM) technique was used on the following seven semivolatile organic compounds in order to achieve detection limits lower than the Region IX PRGs (EPA, 2002):

- Benzo(a)pyrene
- bis(2-Chloroethyl)ether
- Dibenzo(a,h)anthracene
- Hexachlorobenzene
- Indeno(1,2,3-cd)pyrene
- n-Nitrosodi-n-propylamine
- Pentachlorophenol.

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

For each component or compound separated by the gas chromatograph, the mass spectrometer produces a characteristic mass spectrum. The mass spectrometer ionizes the sample molecules and separates any resulting fragments by mass-to-charge (m/z) ratios. The fragmentation pattern

is used to determine the structure of the original molecule. The intensity of one or more of the fragments is used to quantitate the identified compound.

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

3.3 Laboratory Analytical Results

This section provides summary and assessment of the analytical results from the sampling performed at former TAA 651A. The analytical results for the confirmation soil samples at former TAA 651A with comparison to the station's established background concentrations and PRGs are presented in Table 3-1.

QC sample analytical data for former TAA 651A are presented in Table 3-2. The hard copies of the analytical results with QA/QC data obtained from EMAX Analytical Laboratory are included in Appendix F.

3.3.1 Soil Sample Analytical Results

Total Petroleum Hydrocarbons – TPH as gasoline, and diesel were not detected above the laboratory reporting limits in any confirmation soil samples collected from TAA 651A.

Volatile Organic Compounds – VOCs were not detected above the laboratory reporting limits in any confirmation soil samples.

Pesticides – Pesticide compounds were not detected above the laboratory reporting limits for all confirmation soil samples collected from former TAA 651A.

Semivolatile Organic Compounds – No SVOCs were detected above the laboratory reporting limits in the confirmation soil samples collected from former TAA 651A.

To ensure that the laboratory reporting limits were lower than the residential PRGs, the following seven SVOCs were analyzed using the SIM technique:

- Benzo(a)pyrene
- bis(2-Chloroethyl)ether
- Dibenzo(a,h)anthracene
- Hexachlorobenzene
- Indeno(1,2,3-cd)pyrene
- n-Nitrosodi-n-propylamine
- Pentachlorophenol.

The IT criterion for acceptance of this SIM data was that the laboratory method detection limit (MDL) must be equal to or less than half of the PRG.

Metals – The following metals were reported above the reporting limit in the confirmation soil samples as presented in Table 3-1: aluminum, barium, beryllium, cadmium, chromium, cobalt, copper, manganese, vanadium, and zinc. The reporting limits and positive results for several analytes exceeded the established background values. These results are flagged with a B in Table 3-1.

3.3.2 QC Sample Analytical Results

One trip blank was collected for TAA 651A (818655-B3105). The trip blank was analyzed for SVOCs, and no analytes were reported above the reporting limits.

One equipment rinsate sample (818655-B3111) was collected and analyzed for TPH, Pesticides, SVOCs, and Metals. None of the analytes were detected above the laboratory reporting limits for the equipment rinsate sample with the exception of sodium detected at a concentration of 4710 µg/L.

3.4 Data Quality Assessment

The former TAA 651A analytical data were reviewed and validated with respect to the QA/QC parameters specified in the work plan. The following were evaluated:

- EPA recommended holding times
- Cooler condition upon receipt by the laboratory

- Initial and continuing calibration standards
- Method blanks
- Surrogate recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) recoveries
- Laboratory control samples (LCS) recoveries.

All samples were prepared and analyzed within EPA recommended holding times. The sample cooler was received intact and within the required temperature range of 4±2 degrees Celsius. All data are useable as qualified.

3.5 Data Validation

Analytical data were reviewed and validated in accordance with the EPA *National Functional Guidelines for Organic and Inorganic Data Review* (EPA, 1994). Data Validation (DV) Group Inc., an independent data validation company, performed Level III and Level IV validation on the data. A hard copy of the DV Group Inc., report is provided in Appendix G.

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

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

Summary – All data associated with former TAA 651A were usable and acceptable as qualified. Overall precision and accuracy were met. The analytical results and associated qualifiers are summarized in Tables 3-1 and 3-2.

4.0 Risk Characterization and Hazard Index Calculation

This section briefly describes the approach used to estimate risk and summarizes the baseline screening level risk assessment results for former TAA 651A. A screening level risk assessment for human health was conducted following the guidance provided in the EPA Region IX PRGs Memorandum dated November 1, 2002 (EPA, 2002). The results of IT confirmation soil sampling and RCRA Facility Assessment (RFA) angle borings conducted at former TAA 651A were used to calculate risks.

4.1 Physical Characteristics of Former TAA 651A

Based on the review of the RFA boring log, the subsurface lithology at former TAA 651A consists of primarily of silts, sands, and clays. These units appear typical of the channel and overbank deposits in comprising the Holocene deposits on the Tustin Plain. The depth to the groundwater at former TAA 651A is approximately 140 feet below ground surface.

4.2 Exposure Assessment

Former TAA 651A was used as a drum storage area. Building 651 borders TAA 651A on the northeast side, and the remaining surrounding area is paved.

The Station officially closed on July 2, 1999 in accordance with the Base Closure and Realignment Act of 1993 (BRAC III). Former TAA 651A is located within a parcel designated for future use as education area according to the Great Park Land Use Plan that was issued by the City of Irvine in June 2002.

For screening purposes, the ingestion, dermal contact, and inhalation exposure pathways are assumed to be complete for former TAA 651A, as if the area were unpaved. Should the screening fail, further evaluation of the exposure pathways would be required. A site conceptual model for former TAA 651A is shown on Figure 4-1.

Under an industrial and/or residential land use scenario at former TAA 651A, workers, or humans could be potentially exposed to surrounding soil by ingestion, dermal contact, or inhalation of dust or volatilized contaminants. These are the same exposure pathways evaluated by the EPA PRGs (EPA, 2002). Figure 4-2 presents the potential migration pathways at former TAA 651A.

For the purposes of this risk screening evaluation, the residential scenario is used as the worst-case scenario.

4.3 Toxicity Assessment

The PRGs incorporate the toxicity values from the Integrated Risk Information System, the Health Effects Assessment Summary Tables, and the National Center for Environmental Assessment. Cancer PRGs incorporate cancer toxicity values and the noncancer PRGs incorporate the toxicity values for chronic health affects other than cancer (EPA, 2002). Both cancer risk and noncancer hazards were evaluated in this screening risk assessment.

4.4 Risk Characterization

The PRGs are concentrations calculated using standard exposure factors that are protective of humans, including sensitive groups, over a lifetime. These PRG concentrations pose acceptable cancer risk or non-cancer hazard under the exposure scenarios evaluated.
Generally, a cancer risk of 10^{-6} and a non-cancer hazard index (HI) of 1.0 or less are considered acceptable levels of exposure. Therefore, the PRG concentrations are calculated to the lower end of the acceptable cancer risk range of 10^{-6} and to a non-cancer hazard index of 1.0.

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

Although maximum concentrations for chemicals detected at the site are used for this risk screening, comparisons are not made to maximum detected background concentrations. To maintain a conservative estimate of background risk, the 95th quantile background concentrations calculated for the Station (BNI, 1996b) are used to calculate background contributions to cancer risk.

At former TAA 651A, arsenic and chromium were only detected carcinogens at maximum concentration of 4.23 "J" and 16.3 mg/kg respectively. However, both arsenic and chromium were not detected above station's established background concentration of 6.86 and 26.9 mg/kg respectively. The summed cancer risk for soil under the potential future residential scenario after subtracting background is less than 10^{-6} (Table 4-1). The net cancer risk for the current industrial scenario after subtracting background is also less than 10^{-6} (Table 4-2).

Compounds that were detected at former TAA 651A that contribute to the non-cancer HI include aluminum, barium, beryllium, cadmium, cobalt, copper, manganese, vanadium, and zinc. The summed non-cancer hazard index for soil under the potential future residential scenario after subtracting background is less than 1.0 (Table 4-1). For the industrial scenario, the non-cancer hazard index is 0.50 (Table 4-2).

4.3 Toxicity Assessment

The PRGs incorporate the toxicity values from the Integrated Risk Information System, the Health Effects Assessment Summary Tables, and the National Center for Environmental Assessment. Cancer PRGs incorporate cancer toxicity values and the noncancer PRGs incorporate the toxicity values for chronic health affects other than cancer (EPA, 2002). Both cancer risk and noncancer hazards were evaluated in this screening risk assessment.

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4.4 Risk Characterization

The PRGs are concentrations calculated using standard exposure factors that are protective of humans, including sensitive groups, over a lifetime. These PRG concentrations pose acceptable cancer risk or non-cancer hazard under the exposure scenarios evaluated.
Generally, a cancer risk of 10^{-6} and a non-cancer hazard index (HI) of 1.0 or less are considered acceptable levels of exposure. Therefore, the PRG concentrations are calculated to the lower end of the acceptable cancer risk range of 10^{-6} and to a non-cancer hazard index of 1.0.

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

Although maximum concentrations for chemicals detected at the site are used for this risk screening, comparisons are not made to maximum detected background concentrations. To maintain a conservative estimate of background risk, the 95th quantile background concentrations calculated for the Station (BNI, 1996b) are used to calculate background contributions to cancer risk.

+ Arsenic

At former TAA 651A, chromium was only detected carcinogens at maximum concentration of 16.3 mg/kg in soil. However, chromium was not detected above station's established background concentration of 26.9 mg/kg. The summed cancer risk for soil under the potential future residential scenario after subtracting background is less than 10^{-6} (Table 4-1). The net cancer risk for the current industrial scenario after subtracting background is also less than 10^{-6} (Table 4-2).

Compounds that were detected at former TAA 651A that contribute to the non-cancer HI include aluminum, barium, beryllium, cadmium, cobalt, copper, manganese, vanadium, and zinc. The summed non-cancer hazard index for soil under the potential future residential scenario after subtracting background is less than 1.0 (Table 4-1). For the industrial scenario, the non-cancer hazard index is 0.50 (Table 4-2).

Summary

The site-related incremental cancer risk and non-cancer hazard index at former TAA 651A are acceptable for the following reasons:

- The net carcinogenic risk is less than 10^{-6} for the residential scenario and the industrial scenario.
- The summed non-cancer hazard index for soil under the potential future residential scenario after subtracting background is less than 1.0.

5.0 Conclusions and Recommendations

The following conclusions are based upon existing background information, previous field investigations, and IT's confirmation soil sampling analytical results and screening level risk assessment calculations:

- During the RFA, a visual inspection was conducted at SWMU 164 (wash rack) in 1991 and sampling visit was conducted in 1992. The wash rack coincides with the location of the former TAA 651A. The RFA documentation indicates that SWMU 165, drum storage area that corresponds to TAA 651A is located on the wash rack, SWMU 164. The RFA sampling visit included two 60-foot angle soil borings immediately adjacent to and southwest edge of the loading dock, SWMU 164. Soil samples were collected from two 60-foot angle borings during the RFA field-sampling visit. The RFA documentation (JEG 1993) recommended *"no further action"* (NFA) based on the field sampling activities for SWMU 164.
- During a site visit at TAA 651A site in August and September 2002, representatives from SWDIV, Station, IT, and the DTSC visually inspected the bottom of the drain sump located in the middle of the loading dock. Concrete sump was blind with no signs of any cracks, stains, or spills. During the inspection the Navy agreed to collect samples beneath or near the sump.
- On November 12, 2002, IT collected 2 confirmation soil samples from one hand auger boring located at the bottom of the sump.
- The detected carcinogens in soil were arsenic and chromium, which were evaluated to determine the risk associated with their presence for present or anticipated future land uses. The maximum concentration of arsenic in soil was detected at 4.23 "J" mg/kg, which is above residential PRG value of 0.39 mg/kg but below Station's established background concentration of 6.86 mg/kg. The maximum concentration of chromium in soil was detected at 16.3 mg/kg in soil, which is below the residential PRG value of 210 mg/kg and Station's established background concentration of 26.9 mg/kg.
- Other metal compounds detected at former TAA 651A that were evaluated for non-cancer HI contribution include aluminum, barium, beryllium, cadmium, cobalt, copper, manganese, vanadium, and zinc.
- The residential and industrial risk calculations for former TAA 651A resulted in a site-related net cancer risk less background risk of less than 10^{-6}. The residential and industrial non-cancer HI's ~~less background risk~~ was less than 1.0.

The objectives of this project are considered to be achieved, since former TAA 651A is no longer used for storage of drums. Confirmation soil sampling was conducted at former

TAA 651A to verify that concentrations of contaminants were at or below acceptable background or health-risk based concentrations.

Based on the information provided, closure goals were achieved with respect to soil for former TAA 651A; therefore, former TAA 651A (also known as SWMU 165) should be identified as "closed" in next Base Realignment and Closure Business Plan Update.

5.0 Conclusions and Recommendations

The following conclusions are based upon existing background information, previous field investigations, and IT's confirmation soil sampling analytical results and screening level risk assessment calculations:

- During the RFA, a visual inspection was conducted at SWMU 164 (wash rack) in 1991 and sampling visit was conducted in 1992. The wash rack coincides with the location of the former TAA 651A. The RFA documentation indicates that SWMU 165, drum storage area that corresponds to TAA 651A is located on the wash rack, SWMU 164. The RFA sampling visit included two 60-foot angle soil borings immediately adjacent to and southwest edge of the loading dock, SWMU 164. Soil samples were collected from two 60-foot angle borings during the RFA field-sampling visit. The RFA documentation (JEG 1993) recommended *"no further action"* (NFA) based on the field sampling activities for SWMU 164.

  Revised

- During a site visit at TAA 651A site in August and September 2002, representatives from SWDIV, Station, IT, and the DTSC visually inspected the bottom of the drain sump located in the middle of the loading dock. Concrete sump was blind with no signs of any cracks, stains, or spills. During the inspection the Navy agreed to collect samples beneath or near the sump.
- On November 12, 2002, IT collected 2 confirmation soil samples from one hand auger boring located at the bottom of the sump.

  & Arsenic ??

- The only detected carcinogen in soil was chromium, which was evaluated to determine the risk associated with their presence for present or anticipated future land uses. The maximum concentration of chromium in soil was detected at 16.3 mg/kg in soil. However, chromium was not detected above station's established background concentration of 26.9 mg/kg. Metal compounds detected at former TAA 651A that were evaluated for non-cancer HI contribution include aluminum, barium, beryllium, cadmium, cobalt, copper, manganese, vanadium, and zinc.
- The residential and industrial risk calculations for former TAA 651A resulted in a site-related net cancer risk less background risk of less than 10^{-6}. The residential and industrial non-cancer HI's less background risk was less than 1.0.

The objectives of this project are considered to be achieved, since former TAA 651A is no longer used for storage of drums. Confirmation soil sampling was conducted at former TAA 651A to verify that concentrations of contaminants were at or below acceptable background or health-risk based concentrations.

Based on the information provided, closure goals were achieved with respect to soil for former TAA 651A; therefore, former TAA 651A (also known as SWMU 165) should be identified as "closed" in next Base Realignment and Closure Business Plan Update.

Revised

6.0 References

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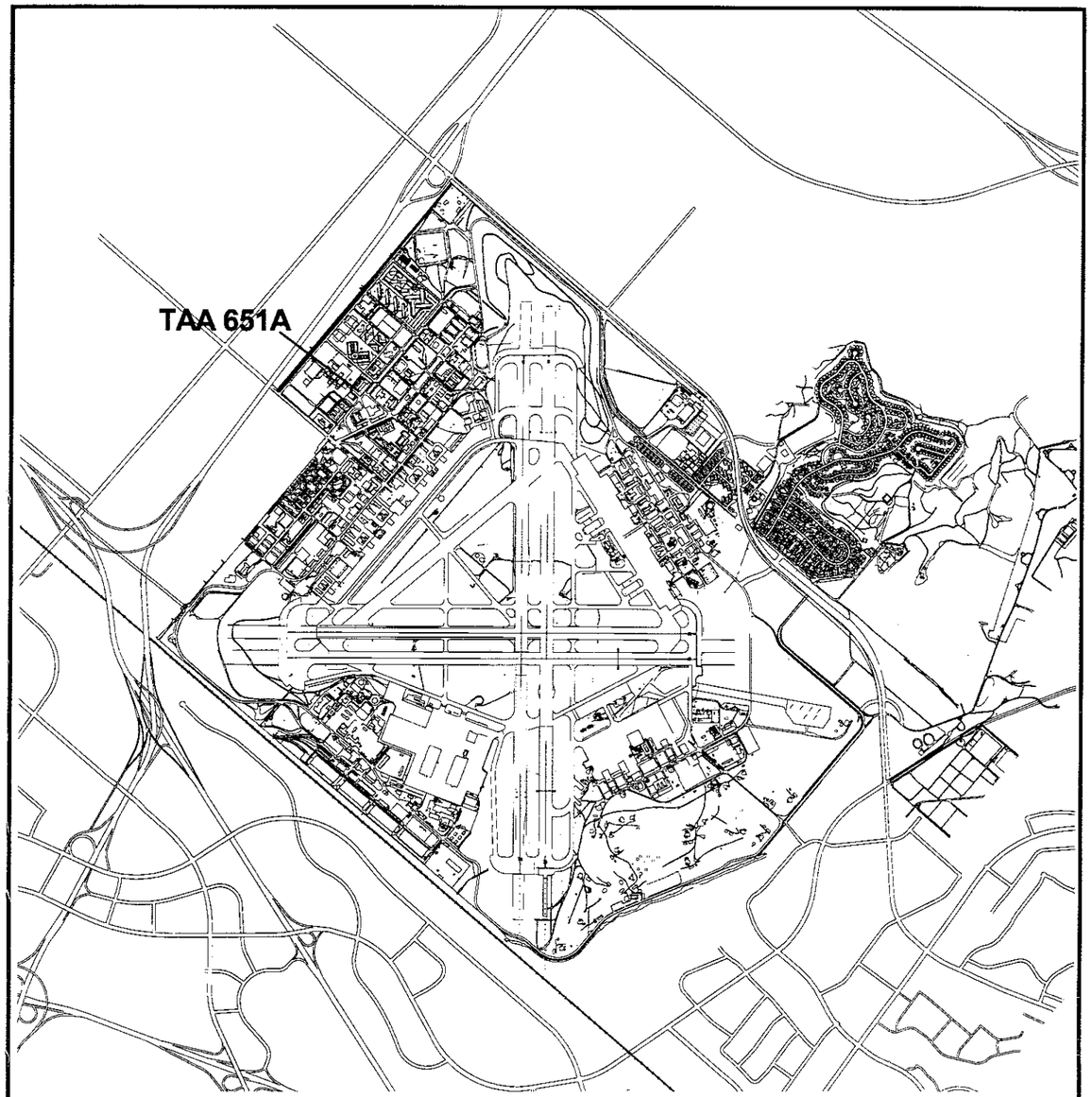
FIGURES



LEGEND

BUILDING

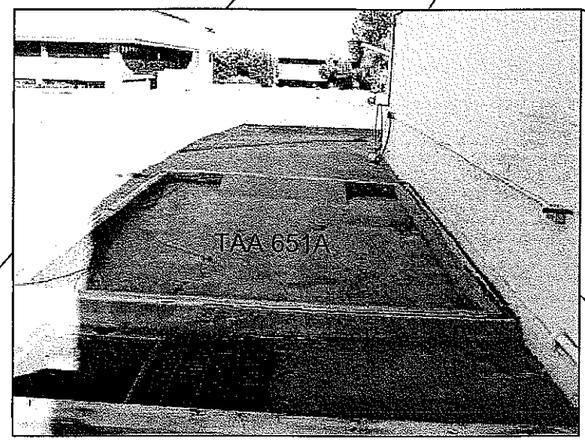
N

1000 0 1000 Feet

IT CORPORATION
A Member of The IT Group

EFA West
Southwest Division
Naval Facilities Engineering Command
Contract NO N62474-98-D2076

Figure 1-1
Vicinity Map
TAA 651A
Marine Corps Air Station
El Toro, California



783

783T

N. 3RD STREET

C STREET

D STREET

FORMER AIR COMPRESSOR LOCATION

164A1

TAA 651A WITH BERM

164A2

SOIL BORING LOCATED UNDER SUMP

N

LEGEND

▲ RFA 60' LONG, ANGLE BORING

GRAPHIC SCALE

0 15 30 60

(IN FEET)

EFA WEST
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CONTRACT NO. N62474-98-D2076

FIGURE 2-1

TAA 651A

MARINE CORPS AIR STATION
EL TORO, CALIFORNIA

DRAWING NUMBER 818655334

APPROVED BY

CHECKED BY

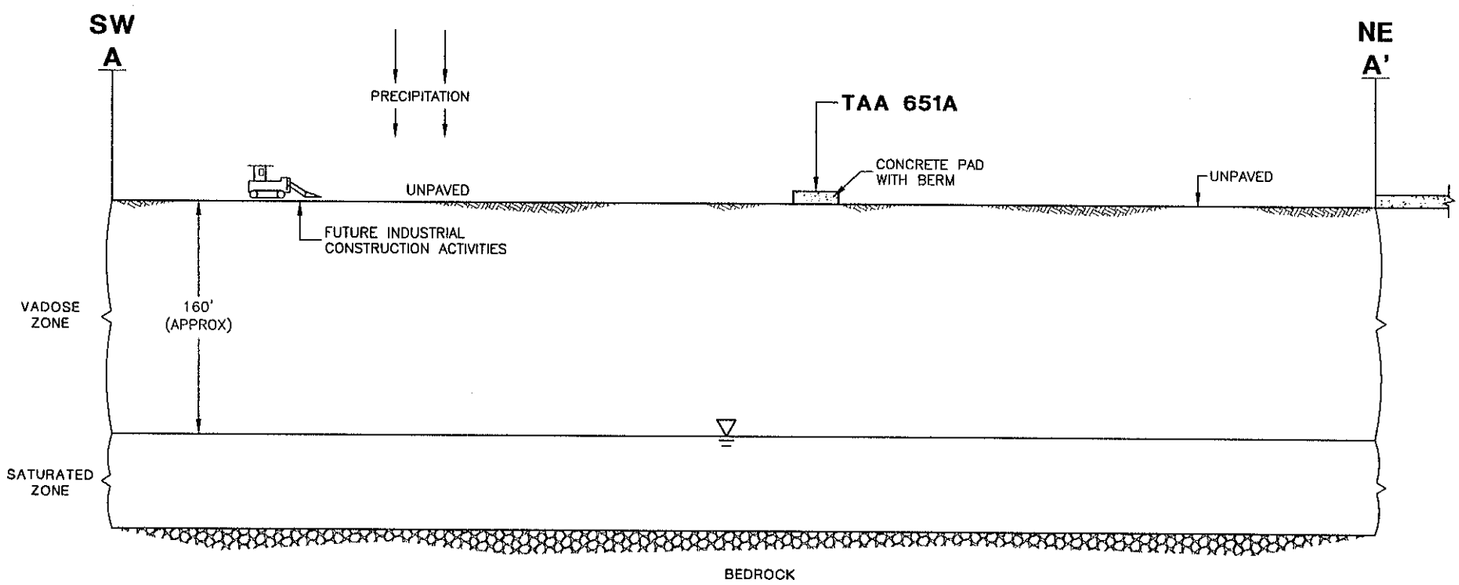
DRAWN BY MY 12-11-02

818655334.dwg

12/31/2002 11:53 AM

Dec 16, 2002 – 14:04:13 I:\IT CORP\EFA_West\818655\818655A38.dwg

DRAWN BY		CHECKED BY		APPROVED BY		DRAWING NUMBER	818655-A38
RP	12/16/02						



EXPLANATION:

RECEPTORS:

WORKERS

PATHWAYS:

GROUNDWATER

PRECIPITATION

REFERENCE:
103M2088.DWG

IT CORPORATION

EFA WEST
SOUTHWEST DIVISION
NAVAL FACILITIES ENGINEERING COMMAND
CTO 24

FIGURE 4-1

CONCEPTUAL SITE MODEL
TAA 651A

MARINE CORPS AIR STATION
EL TORO, CALIFORNIA

TABLES

Table 3-1
Summary of Analytical Results for Confirmation Soil Samples — TAA651A

Sample Identification					818655-B3106	818655-B3107
Location Code					TAA651A	TAA651A
Date Sampled					11/12/2002	11/12/2002
Depth (feet below ground surface)					4.5	6
	Unit	Background	PRG Residential	PRG Industrial		
TPH						
Diesel	mg/kg	NE	NE	NE	13 U	12 U
Gasoline	mg/kg	NE	NE	NE	11 U	10 U
PESTICIDES						
4,4'-DDD	mg/kg	36.1	2.4	9.9	.0051 U	.0049 U
4,4'-DDE	mg/kg	145	1.7	7.0	.0051 U	.0049 U
4,4'-DDT	mg/kg	236	1.7	7.0	.0051 UJ	.0049 U
Aldrin	mg/kg	NE	0.029	0.10	.0025 U	.0024 U
Alpha-BHC	mg/kg	NE	0.090	0.36	.0025 UJ	.0024 U
Alpha-Chlordane	mg/kg	2.24	NE	NE	.0025 U	.0024 U
Beta-BHC	mg/kg	NE	0.32	1.3	.0025 U	.0024 U
Delta-BHC	mg/kg	NE	NE	NE	.0025 U	.0024 U
Dieldrin	mg/kg	19.9	0.030	0.11	.0051 U	.0049 U
Endosulfan I	mg/kg	0.179	370	3700	.0051 U	.0049 U
Endosulfan II	mg/kg	2.22	NE	NE	.0051 U	.0049 U
Endosulfan Sulfate	mg/kg	3.1	NE	NE	.0051 U	.0049 U
Endrin	mg/kg	2.22	18	185	.0038 UJ	.0037 U
Endrin Aldehyde	mg/kg	2.22	NE	NE	.0051 U	.0049 U
Endrin Ketone	mg/kg	NE	NE	NE	.0038 U	.0037 U
Gamma-BHC	mg/kg	NE	0.44	1.74	.0025 U	.0024 U
Gamma-Chlordane	mg/kg	2.7	NE	NE	.0025 U	.0024 U
Heptachlor	mg/kg	NE	0.11	0.38	.0025 UJ	.0024 U
Heptachlor Epoxide	mg/kg	NE	0.053	0.19	.0025 U	.0024 U
Methoxychlor	mg/kg	NE	300	3100	.025 UJ	.024 U
Toxaphene	mg/kg	NE	0.44	1.6	.13 U	.12 U
PCBS						
PCB-1016	mg/kg	NE	NE	NE	.063 U	.061 U
PCB-1221	mg/kg	NE	NE	NE	.063 U	.061 U
PCB-1232	mg/kg	NE	NE	NE	.063 U	.061 U
PCB-1242	mg/kg	NE	NE	NE	.063 U	.061 U
PCB-1248	mg/kg	NE	NE	NE	.063 U	.061 U
PCB-1254	mg/kg	NE	NE	NE	.063 U	.061 U
PCB-1260	mg/kg	NE	NE	NE	.063 U	.061 U

Table 3-1
Summary of Analytical Results for Confirmation Soil Samples — TAA651A

Sample Identification					818655-B3106	818655-B3107
Location Code					TAA651A	TAA651A
Date Sampled					11/12/2002	11/12/2002
Depth (feet below ground surface)					4.5	6
	Unit	Background	PRG Residential	PRG Industrial		
VOLATILES						
1,1,1-Trichloroethane	µg/kg	NE	1200000	1200000	5.9 U	5.4 U
1,1,2,2-Tetrachloroethane	µg/kg	NE	410	930	5.9 U	5.4 U
1,1,2-Trichloroethane	µg/kg	NE	730	1600	5.9 U	5.4 U
1,1-Dichloroethane	µg/kg	NE	510000<2800>	1700000	5.9 U	5.4 U
1,1-Dichloroethene	µg/kg	NE	120000	410000	5.9 U	5.4 U
1,2-Dichloroethane	µg/kg	NE	280	600	5.9 U	5.4 U
1,2-Dichloropropane	µg/kg	NE	340	740	5.9 U	5.4 U
2-Butanone	µg/kg	NE	NE	NE	59 U	54 U
2-Chloroethyl Vinyl Ether	µg/kg	NE	NE	NE	59 U	54 U
2-Hexanone	µg/kg	NE	NE	NE	59 U	54 U
4-Methyl-2-Pentanone	µg/kg	NE	NE	NE	59 U	54 U
Acetone	µg/kg	NE	1600000	6000000	59 U	54 U
Benzene	µg/kg	NE	600	1300	5.9 U	5.4 U
Bromodichloromethane	µg/kg	NE	820	1800	5.9 U	5.4 U
Bromoform	µg/kg	NE	62000	220000	5.9 U	5.4 U
Bromomethane	µg/kg	NE	3900	13000	5.9 U	5.4 U
Carbon Disulfide	µg/kg	NE	360000	720000	5.9 U	5.4 U
Carbon Tetrachloride	µg/kg	NE	250	550	5.9 U	5.4 U
Chlorobenzene	µg/kg	NE	150000	530000	5.9 U	5.4 U
Chloroethane	µg/kg	NE	3000	6500	5.9 U	5.4 U
Chloroform	µg/kg	NE	3600<940>	12000	5.9 U	5.4 U
Chloromethane	µg/kg	NE	1200	2600	5.9 U	5.4 U
Cis-1,2-Dichloroethene	µg/kg	NE	43000	150000	5.9 U	5.4 U
Cis-1,3-Dichloropropene	µg/kg	NE	780	1800	5.9 U	5.4 U
Dibromochloromethane	µg/kg	NE	1100	2600	5.9 U	5.4 U
Ethylbenzene	µg/kg	NE	8900	19000	5.9 U	5.4 U
Methyl Tert-Butyl Ether	µg/kg	NE	62000<17000>	160000	12 U	11 U
Methylene Chloride	µg/kg	NE	9100	21000	5.9 U	5.4 U
Styrene	µg/kg	NE	1700000	1700000	5.9 U	5.4 U
Tetrachloroethene	µg/kg	NE	1500	3400	5.9 U	5.4 U
Toluene	µg/kg	NE	520000	520000	5.9 U	5.4 U
Trans-1,2-Dichloroethene	µg/kg	NE	69000	230000	5.9 U	5.4 U

Table 3-1
Summary of Analytical Results for Confirmation Soil Samples — TAA651A

Sample Identification					818655-B3106	818655-B3107
Location Code					TAA651A	TAA651A
Date Sampled					11/12/2002	11/12/2002
Depth (feet below ground surface)					4.5	6
	Unit	Background	PRG Residential	PRG Industrial		
Trans-1,3-Dichloropropene	µg/kg	NE	780	1800	5.9 U	5.4 U
Trichloroethene	µg/kg	NE	53	110	5.9 U	5.4 U
Vinyl Acetate	µg/kg	NE	420000	1400000	59 U	54 U
Vinyl Chloride	µg/kg	NE	79		5.9 U	5.4 U
Xylene, (Total)	µg/kg	NE	NE	NE	5.9 U	5.4 U
SEMI-VOLATILES						
1,2,4-Trichlorobenzene	µg/kg	NE	650000	3000000	420 U	400 U
1,2-Dichlorobenzene	µg/kg	NE	370000	370000	420 U	400 U
1,3-Dichlorobenzene	µg/kg	NE	16000	63000	420 U	400 U
1,4-Dichlorobenzene	µg/kg	NE	3400	7900	420 U	400 U
2,4,5-Trichlorophenol	µg/kg	NE	6100000	62000000	1100 U	1000 U
2,4,6-Trichlorophenol	µg/kg	NE	6100<6900>	62000	420 U	400 U
2,4-Dichlorophenol	µg/kg	NE	180000	1900000	420 U	400 U
2,4-Dimethylphenol	µg/kg	NE	1200000	12000000	420 U	400 U
2,4-Dinitrophenol	µg/kg	NE	120000	1200000	1100 U	1000 U
2,4-Dinitrotoluene	µg/kg	NE	120000	1200000	420 U	400 U
2,6-Dinitrotoluene	µg/kg	NE	61000	620000	420 U	400 U
2-Chloronaphthalene	µg/kg	NE	4900000	23000000	420 U	400 U
2-Chlorophenol	µg/kg	NE	63000	240000	420 U	400 U
2-Methylnaphthalene	µg/kg	NE	NE	NE	420 U	400 U
2-Methylphenol	µg/kg	NE	3000000	31000000	420 U	400 U
2-Nitroaniline	µg/kg	NE	1700	18000	1100 U	1000 U
2-Nitrophenol	µg/kg	NE	NE	NE	420 U	400 U
3,3'-Dichlorobenzidine	µg/kg	NE	1100	3800	420 U	400 U
3-Nitroaniline	µg/kg	NE	NE	NE	1100 U	1000 U
4,6-Dinitro-2-Methylphenol	µg/kg	NE	NE	NE	1100 U	1000 U
4-Bromophenyl Phenyl Ether	µg/kg	NE	NE	NE	420 U	400 U
4-Chloro-3-Methylphenol	µg/kg	NE	NE	NE	420 U	400 U
4-Chloroaniline	µg/kg	NE	240000	2500000	420 U	400 U
4-Chlorophenyl Phenyl Ether	µg/kg	NE	NE	NE	420 U	400 U
4-Methylphenol	µg/kg	NE	310000	3100000	420 U	400 U
4-Nitroaniline	µg/kg	NE	NE	NE	1100 U	1000 U
4-Nitrophenol	µg/kg	NE	NE	NE	1100 U	1000 U

Table 3-1
Summary of Analytical Results for Confirmation Soil Samples — TAA651A

Sample Identification					818655-B3106	818655-B3107
Location Code					TAA651A	TAA651A
Date Sampled					11/12/2002	11/12/2002
Depth (feet below ground surface)					4.5	6
	Unit	Background	PRG Residential	PRG Industrial		
Acenaphthene	µg/kg	NE	3700000	29000000	420 U	400 U
Acenaphthylene	µg/kg	NE	NE	NE	420 U	400 U
Anthracene	µg/kg	NE	22000000	100000000	420 U	400 U
Benzo(a)Anthracene	µg/kg	NE	NE	NE	420 U	400 U
Benzo(a)Pyrene	µg/kg	NE	NE	NE	42 U	40 U
Benzo(b)Fluoranthene	µg/kg	NE	NE	NE	420 U	400 U
Benzo(ghi)Perylene	µg/kg	NE	NE	NE	420 U	400 U
Benzo(k)Fluoranthene	µg/kg	NE	NE	NE	420 U	400 U
Bis(2-Chloroethoxy)Methane	µg/kg	NE	NE	NE	420 U	400 U
Bis(2-Chloroethyl)Ether	µg/kg	NE	NE	NE	42 U	40 U
Bis(2-Chloroisopropyl)Ether	µg/kg	NE	NE	NE	420 U	400 U
Bis(2-Ethylhexyl)Phthalate	µg/kg	NE	NE	NE	420 U	400 U
Butyl Benzyl Phthalate	µg/kg	NE	12000000	100000000	420 U	400 U
Chrysene	µg/kg	31	62000<3900>	210000	420 U	400 U
Di-N-Butyl Phthalate	µg/kg	NE	NE	NE	420 U	400 U
Di-N-Octyl Phthalate	µg/kg	NE	NE	NE	420 U	400 U
Dibenzo(a,h)Anthracene	µg/kg	NE	NE	NE	42 U	40 U
Dibenzofuran	µg/kg	NE	290000	3100000	420 U	400 U
Diethyl Phthalate	µg/kg	NE	49000000	100000000	420 U	400 U
Dimethyl Phthalate	µg/kg	NE	100000000	100000000	420 U	400 U
Fluoranthene	µg/kg	45	2300000	22000000	420 U	400 U
Fluorene	µg/kg	NE	2700000	26000000	420 U	400 U
Hexachlorobenzene	µg/kg	NE	300	1100	95 U	91 U
Hexachlorobutadiene	µg/kg	NE	6200	22000	420 U	400 U
Hexachlorocyclopentadiene	µg/kg	NE	370000	3700000	420 U	400 U
Hexachloroethane	µg/kg	NE	35000	120000	420 U	400 U
Indeno(1,2,3-cd)Pyrene	µg/kg	NE	NE	NE	44 U	43 U
N-Nitroso-Di-N-Propylamine	µg/kg	NE	NE	NE	42 U	40 U
N-Nitrosodiphenylamine	µg/kg	NE	99000	350000	420 U	400 U
Naphthalene	µg/kg	NE	60000	190000	420 U	400 U
Nitrobenzene	µg/kg	NE	20000	100000	420 U	400 U
Pentachlorophenol	µg/kg	NE	3000	9000	250 U	240 U
Phenanthrene	µg/kg	18	NE	NE	420 U	400 U

Table 3-1
Summary of Analytical Results for Confirmation Soil Samples — TAA651A

Sample Identification					818655-B3106	818655-B3107
Location Code					TAA651A	TAA651A
Date Sampled					11/12/2002	11/12/2002
Depth (feet below ground surface)					4.5	6
	Unit	Background	PRG Residential	PRG Industrial		
Phenol	µg/kg	NE	37000000	100000000	420 U	400 U
Pyrene	µg/kg	41	2300000	29000000	420 U	400 U
METALS						
Aluminum	mg/kg	14800	76000	100000	15700 B	19900 B
Antimony	mg/kg	3.06	31	410	6.34 U	6.1 U
Arsenic	mg/kg	6.86	0.39	1.6	3.47 J XY	4.23 J XY
Barium	mg/kg	173	5400	67000	115	160
Beryllium	mg/kg	0.669	150	1900	.578	.733 B
Cadmium	mg/kg	2.35	37 <1.7>	450	.634 U	.642
Calcium	mg/kg	46000	NE	NE	4110	8060
Chromium	mg/kg	26.9	210	450	12.7	16.3
Cobalt	mg/kg	6.98	900	1900	8.8 B	7.31 B
Copper	mg/kg	10.5	3100	41000	8.98	10.3
Iron	mg/kg	18400	23000	100000	15500 J	18200 J
Lead	mg/kg	15.1	400 <150>	750	16.3 J B	2.92 J
Magnesium	mg/kg	8370	NE	NE	6560	8190
Manganese	mg/kg	291	1800	19000	202	278
Mercury	mg/kg	0.22	NE	NE	.127 U	.122 U
Molybdenum	mg/kg	NE	390	5100	1.73 J	2.87 J
Nickel	mg/kg	15.3	1600	20000	6.86 J	9.21 J
Potassium	mg/kg	4890	NE	NE	4080	4840
Selenium	mg/kg	0.32	390	5100	.688 J B	.557 J B
Silver	mg/kg	0.539	390	5100	2.53 U	2.44 U
Sodium	mg/kg	405	NE	NE	133	140
Thallium	mg/kg	0.42	5.2	67.0	1.27 U	1.22 U
Vanadium	mg/kg	71.8	550	7200	38.4	51.6
Zinc	mg/kg	77.9	23000	100000	51.7	54.5

Table 3-1
Summary of Analytical Results for Confirmation Soil Samples — SB Footer

B - *result exceeds background*
J - *estimated value*
M - *modified*
MCAS - *Marine Corps Air Station*
mg/kg - *milligrams per kilogram*
NE - *not established*
TPH - *total petroleum hydrocarbons*
U - *not detected at or above the stated reporting limit*
UJ - *estimated reporting limit*
X - *result exceeds industrial PRGs*
Y - *result exceeds residential PRGs*
µg/kg - *micrograms per kilogram*
< > - *California preliminary remediation goal*
*** - *Background level @ MCAS El Toro*

Table 3-2
Summary of Analytical Results for QC Samples — TAA 651A

Sample Identification Location Code Date Sampled	Unit	818655-B3111 Equipment Rinsate 11/12/2002	818655-B3105 Trip Blank 11/12/2002
TPH			
Diesel	mg/L	.094 U	NA
Gasoline	mg/L	.1 U	NA
PESTICIDES			
4,4'-DDD	µg/L	.19 U	NA
4,4'-DDE	µg/L	.19 U	NA
4,4'-DDT	µg/L	.19 U	NA
Aldrin	µg/L	.094 U	NA
Alpha-BHC	µg/L	.094 U	NA
Alpha-Chlordane	µg/L	.094 U	NA
Beta-BHC	µg/L	.094 U	NA
Delta-BHC	µg/L	.094 U	NA
Dieldrin	µg/L	.19 U	NA
Endosulfan I	µg/L	.094 U	NA
Endosulfan II	µg/L	.19 U	NA
Endosulfan Sulfate	µg/L	.19 U	NA
Endrin	µg/L	.094 U	NA
Endrin Aldehyde	µg/L	.19 U	NA
Endrin Ketone	µg/L	.094 U	NA
Gamma-BHC	µg/L	.094 U	NA
Gamma-Chlordane	µg/L	.094 U	NA
Heptachlor	µg/L	.094 U	NA
Heptachlor Epoxide	µg/L	.094 U	NA
Methoxychlor	µg/L	.94 U	NA
Toxaphene	µg/L	2.8 U	NA
PCBS	µg/L		
PCB-1016	µg/L	.94 U	NA
PCB-1221	µg/L	.94 U	NA
PCB-1232	µg/L	.94 U	NA
PCB-1242	µg/L	.94 U	NA
PCB-1248	µg/L	.94 U	NA
PCB-1254	µg/L	.94 U	NA
PCB-1260	µg/L	.94 U	NA

Table 3-2
Summary of Analytical Results for QC Samples — TAA 651A

Sample Identification Location Code Date Sampled	Unit	818655-B3111 Equipment Rinsate 11/12/2002	818655-B3105 Trip Blank 11/12/2002
VOLATILES			
1,1,1-Trichloroethane	µg/L	5 U	5 U
1,1,2,2-Tetrachloroethane	µg/L	5 U	5 U
1,1,2-Trichloroethane	µg/L	5 U	5 U
1,1-Dichloroethane	µg/L	5 U	5 U
1,1-Dichloroethene	µg/L	5 U	5 U
1,2-Dichloroethane	µg/L	5 U	5 U
1,2-Dichloropropane	µg/L	5 U	5 U
2-Butanone	µg/L	50 U	50 U
2-Chloroethyl Vinyl Ether	µg/L	50 U	50 U
2-Hexanone	µg/L	50 U	50 U
4-Methyl-2-Pentanone	µg/L	50 U	50 U
Acetone	µg/L	50 U	50 U
Benzene	µg/L	5 U	5 U
Bromodichloromethane	µg/L	5 U	5 U
Bromoform	µg/L	5 U	5 U
Bromomethane	µg/L	5 U	5 U
Carbon Disulfide	µg/L	5 U	5 U
Carbon Tetrachloride	µg/L	5 U	5 U
Chlorobenzene	µg/L	5 U	5 U
Chloroethane	µg/L	5 U	5 U
Chloroform	µg/L	5 U	5 U
Chloromethane	µg/L	5 U	5 U
Cis-1,2-Dichloroethene	µg/L	5 U	5 U
Cis-1,3-Dichloropropene	µg/L	5 U	5 U
Dibromochloromethane	µg/L	5 U	5 U
Ethylbenzene	µg/L	5 U	5 U
Methyl Tert-Butyl Ether	µg/L	10 U	10 U
Methylene Chloride	µg/L	5 U	5 U
Styrene	µg/L	5 U	5 U
Tetrachloroethene	µg/L	5 U	5 U
Toluene	µg/L	5 U	5 U
Trans-1,2-Dichloroethene	µg/L	5 U	5 U

Table 3-2
Summary of Analytical Results for QC Samples — TAA 651A

Sample Identification Location Code Date Sampled	Unit	818655-B3111 Equipment Rinsate 11/12/2002	818655-B3105 Trip Blank 11/12/2002
Trans-1,3-Dichloropropene	µg/L	5 U	5 U
Trichloroethene	µg/L	5 U	5 U
Vinyl Acetate	µg/L	50 U	50 U
Vinyl Chloride	µg/L	5 U	5 U
Xylene, (Total)	µg/L	5 U	5 U
SEMI-VOLATILES			
1,2,4-Trichlorobenzene	µg/L	9.4 U	NA
1,2-Dichlorobenzene	µg/L	9.4 U	NA
1,3-Dichlorobenzene	µg/L	9.4 U	NA
1,4-Dichlorobenzene	µg/L	9.4 U	NA
2,4,5-Trichlorophenol	µg/L	24 U	NA
2,4,6-Trichlorophenol	µg/L	9.4 U	NA
2,4-Dichlorophenol	µg/L	9.4 U	NA
2,4-Dimethylphenol	µg/L	9.4 U	NA
2,4-Dinitrophenol	µg/L	24 U	NA
2,4-Dinitrotoluene	µg/L	9.4 U	NA
2,6-Dinitrotoluene	µg/L	9.4 U	NA
2-Chloronaphthalene	µg/L	9.4 U	NA
2-Chlorophenol	µg/L	9.4 U	NA
2-Methylnaphthalene	µg/L	9.4 U	NA
2-Methylphenol	µg/L	9.4 U	NA
2-Nitroaniline	µg/L	24 U	NA
2-Nitrophenol	µg/L	9.4 U	NA
3,3'-Dichlorobenzidine	µg/L	9.4 U	NA
3-Nitroaniline	µg/L	24 U	NA
4,6-Dinitro-2-Methylphenol	µg/L	24 U	NA
4-Bromophenyl Phenyl Ether	µg/L	9.4 U	NA
4-Chloro-3-Methylphenol	µg/L	9.4 U	NA
4-Chloroaniline	µg/L	9.4 U	NA
4-Chlorophenyl Phenyl Ether	µg/L	9.4 U	NA
4-Methylphenol	µg/L	9.4 U	NA
4-Nitroaniline	µg/L	24 U	NA
4-Nitrophenol	µg/L	24 U	NA

Table 3-2
Summary of Analytical Results for QC Samples — TAA 651A

Sample Identification Location Code Date Sampled	Unit	818655-B3111 Equipment Rinsate 11/12/2002	818655-B3105 Trip Blank 11/12/2002
Acenaphthene	µg/L	9.4 U	NA
Acenaphthylene	µg/L	9.4 U	NA
Anthracene	µg/L	9.4 U	NA
Benzo(a)Anthracene	µg/L	9.4 U	NA
Benzo(a)Pyrene	µg/L	9.4 U	NA
Benzo(b)Fluoranthene	µg/L	9.4 U	NA
Benzo(ghi)Perylene	µg/L	9.4 U	NA
Benzo(k)Fluoranthene	µg/L	9.4 U	NA
Bis(2-Chloroethoxy)Methane	µg/L	9.4 U	NA
Bis(2-Chloroethyl)Ether	µg/L	9.4 U	NA
Bis(2-Chloroisopropyl)Ether	µg/L	9.4 U	NA
Bis(2-Ethylhexyl)Phthalate	µg/L	19 U	NA
Butyl Benzyl Phthalate	µg/L	9.4 U	NA
Chrysene	µg/L	9.4 U	NA
Di-N-Butyl Phthalate	µg/L	9.4 U	NA
Di-N-Octyl Phthalate	µg/L	9.4 U	NA
Dibenzo(a,h)Anthracene	µg/L	9.4 U	NA
Dibenzofuran	µg/L	9.4 U	NA
Diethyl Phthalate	µg/L	9.4 U	NA
Dimethyl Phthalate	µg/L	9.4 U	NA
Fluoranthene	µg/L	9.4 U	NA
Fluorene	µg/L	9.4 U	NA
Hexachlorobenzene	µg/L	9.4 U	NA
Hexachlorobutadiene	µg/L	9.4 U	NA
Hexachlorocyclopentadiene	µg/L	9.4 U	NA
Hexachloroethane	µg/L	9.4 U	NA
Indeno(1,2,3-Cd)Pyrene	µg/L	9.4 U	NA
N-Nitroso-Di-N-Propylamine	µg/L	9.4 U	NA
N-Nitrosodiphenylamine	µg/L	9.4 U	NA
Naphthalene	µg/L	9.4 U	NA
Nitrobenzene	µg/L	9.4 U	NA
Pentachlorophenol	µg/L	9.4 U	NA
Phenanthrene	µg/L	9.4 U	NA

Table 3-2
Summary of Analytical Results for QC Samples — TAA 651A

Sample Identification Location Code Date Sampled	Unit	818655-B3111 Equipment Rinsate 11/12/2002	818655-B3105 Trip Blank 11/12/2002
Phenol	µg/L	9.4 U	NA
Pyrene	µg/L	9.4 U	NA
METALS			
Aluminum	µg/L	500 U	NA
Antimony	µg/L	500 U	NA
Arsenic	µg/L	5 U	NA
Barium	µg/L	100 U	NA
Beryllium	µg/L	10 U	NA
Cadmium	µg/L	5 U	NA
Calcium	µg/L	975 J	NA
Chromium	µg/L	50 U	NA
Cobalt	µg/L	50 U	NA
Copper	µg/L	50 U	NA
Iron	µg/L	32.1 J	NA
Lead	µg/L	5 U	NA
Magnesium	µg/L	928 J	NA
Manganese	µg/L	20 U	NA
Mercury	µg/L	.2 U	NA
Molybdenum	µg/L	100 U	NA
Nickel	µg/L	150 U	NA
Potassium	µg/L	5000 U	NA
Selenium	µg/L	5 U	NA
Silver	µg/L	50 U	NA
Sodium	µg/L	4710	NA
Thallium	µg/L	10 U	NA
Vanadium	µg/L	100 U	NA
Zinc	µg/L	20 U	NA

J - estimated value
MCAS - Marine Corps Air Station
mg/L - milligrams per liter
NA - not analyzed
QC - quality control
U - not detected at or above the stated reporting limit
µg/L - micrograms per liter

Table 4-1
Residential Risk Screening Worksheet for Soil
Former TAA 651A

Detected Chemical	Maximum TAA 651A Soil Concentration (mg/kg)	MCAS El Toro Background Concentration[a] (mg/kg)	CANCER			NON-CANCER		
			Residential PRG[b] (mg/kg)	TAA 651A Maximum Ratio[c]	MCAS El Toro Background Ratio[d]	Residential PRG[e] (mg/kg)	TAA 651A Maximum Ratio[f]	MCAS El Toro Background Ratio[f]
METALS								
Aluminum	19900	14800	NE	NE	NE	7.6E+04	2.62E-01	1.95E-01
Arsenic	4.23	6.86	3.9E-01	1.08E+01	1.08E+01	2.2E+01	1.92E-01	3.12E-01
Barium	160	173	NE	NE	NE	5.4E+03	2.96E-02	3.20E-02
Beryllium	.733	0.669	NE	NE	NE	1.5E+02	4.89E-03	4.46E-03
Cadmium	.642	2.35	NE	NE	NE	3.7E+01	1.74E-02	6.35E-02
Chromium	16.3	26.9	2.1E+02	7.76E-02	1.28E-01	NE	NE	NE
Cobalt	8.8	6.98	NE	NE	NE	4.7E+03	1.87E-03	1.49E-03
Copper	10.3	10.5	NE	NE	NE	2.9E+03	3.55E-03	3.62E-03
Manganese	278	8370	NE	NE	NE	1.8E+03	1.54E-01	4.65E+00
Vanadium	51.6	71.8	NE	NE	NE	5.5E+02	9.38E-02	1.31E-01
Zinc	54.5	77.9	NE	NE	NE	2.3E+04	2.37E-03	3.39E-03
Subtotal sum of ratios				1.09E+01	1.10E+01		7.62E-01	5.40E+00
MCAS EL TORO BACKGROUND RISK RATIOS			CANCER RISK		1.10E-05	NON-CANCER HAZARD INDEX		5.40
TAA 651A SUMMED RISK			CANCER RISK	1.09E-05		NON-CANCER HAZARD INDEX	0.76	
TAA 651A RISK LESS BACKGROUND RISK (NET RISK			NET CANCER RISK	$<1x10^{6}$				

[a] *MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.*

[b] *Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.*

[c] *The Ratio is determined by dividing the Concentration by the respective PRG.*

[d] *Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.*

[e] *Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.*

[f] *The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.*

mg/kg - Milligrams per kilogram.

NE - Not established/No entry.

PRG - Preliminary remediation goal.

Table 4-2
Industrial Risk Screening Worksheet for Soil
Former TAA 651A

Detected Chemical	Maximum TAA 651A Soil Concentration (mg/kg)	MCAS El Toro Background Concentration[a] (mg/kg)	CANCER			NON-CANCER		
			Industrial PRG[b] (mg/kg)	TAA 651A Maximum Ratio[c]	MCAS El Toro Background Ratio[d]	Industrial PRG[e] (mg/kg)	TAA 651A Maximum Ratio[f]	MCAS El Toro Background Ratio[f]
METALS								
Aluminum	19900	14800	NE	NE	NE	7.6E+04	2.62E-01	1.95E-01
Arsenic	4.23	6.86	2.6E+02	1.63E-02	1.63E-02	2.6E+02	1.63E-02	2.64E-02
Barium	160	173	NE	NE	NE	5.4E+03	2.96E-02	3.20E-02
Beryllium	.733	0.669	NE	NE	NE	1.9E+03	3.86E-04	3.52E-04
Cadmium	.642	2.35	NE	NE	NE	4.5E+02	1.43E-03	5.22E-03
Chromium	16.3	26.9	4.5E+02	3.62E-02	5.98E-02	NE	NE	NE
Cobalt	8.8	6.98	NE	NE	NE	4.7E+03	1.87E-03	1.49E-03
Copper	10.3	10.5	NE	NE	NE	2.9E+03	3.55E-03	3.62E-03
Manganese	278	8370	NE	NE	NE	3.2E+04	8.69E-03	2.62E-01
Vanadium	51.6	71.8	NE	NE	NE	1.4E+04	3.69E-03	5.13E-03
Zinc	54.5	77.9	NE	NE	NE	1.0E+05	5.45E-04	7.79E-04
Subtotal sum of ratios				5.25E-02	7.60E-02		3.28E-01	5.31E-01
MCAS EL TORO BACKGROUND RISK RATIOS			**CANCER RISK**		**7.60E-08**	**NON-CANCER HAZARD INDEX**		**0.53**
TAA 651A SUMMED RISK			**CANCER RISK**	**5.25E-08**		**NON-CANCER HAZARD INDEX**	**0.33**	
TAA 651A RISK LESS BACKGROUND RISK (NET RISK)			**NET CANCER RISK**	**$<1x10^6$**				

[a] *MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.*

[b] *Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.*

[c] *The Ratio is determined by dividing the Concentration by the respective PRG.*

[d] *Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.*

[e] *Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.*

[f] *The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.*

mg/kg - Milligrams per kilogram.
NE - Not established/No entry.
PRG - Preliminary remediation goal.

Table 4-1
Residential Risk Screening Worksheet for Soil
Former TAA 651A

Detected Chemical	Maximum TAA 651A Soil Concentration (mg/kg)	MCAS El Toro Background Concentration[a] (mg/kg)	CANCER			NON-CANCER		
			Residential PRG[b] (mg/kg)	TAA 651A Maximum Ratio[c]	MCAS El Toro Background Ratio[d]	Residential PRG[e] (mg/kg)	TAA 651A Maximum Ratio[f]	MCAS El Toro Background Ratio[f]
METALS								
Aluminum	19900	14800	NE	NE	NE	7.6E+04	2.62E-01	1.95E-01
barium	160	173	NE	NE	NE	5.4E+03	2.96E-02	3.20E-02
Beryllium	.733	0.669	NE	NE	NE	1.5E+02	4.89E-03	4.46E-03
Cadmium	.642	2.35	NE	NE	NE	3.7E+01	1.74E-02	6.35E-02
Chromium	16.3	26.9	2.1E+02	7.76E-02	1.28E-01	NE	NE	NE
Cobalt	8.8	6.98	NE	NE	NE	4.7E+03	1.87E-03	1.49E-03
Copper	10.3	10.5	NE	NE	NE	2.9E+03	3.55E-03	3.62E-03
Manganese	278	8370	NE	NE	NE	1.8E+03	1.54E-01	4.65E+00
Vanadium	51.6	71.8	NE	NE	NE	5.5E+02	9.38E-02	1.31E-01
Zinc	54.5	77.9	NE	NE	NE	2.3E+04	2.37E-03	3.39E-03
Subtotal sum of ratios				7.76E-02	1.28E-01		3.08E-01	5.08E+00
MCAS EL TORO BACKGROUND RISK RATIOS			**CANCER RISK**		**1.28E-07**	**NON-CANCER HAZARD INDEX**		**5.08**
TAA 651A SUMMED RISK			**CANCER RISK**	**7.76E-08**		**NON-CANCER HAZARD INDEX**	**0.31**	
TAA 651A RISK LESS BACKGROUND RISK (NET RISK)			**NET CANCER RISK**	**$<1x10^6$**				

[a] MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.

[b] Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.

[c] The Ratio is determined by dividing the Concentration by the respective PRG.

[d] Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.

[e] Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.

[f] The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.

mg/kg - Milligrams per kilogram.

NE - Not established/No entry.

PRG - Preliminary remediation goal.

Revised

Table 4-2
Industrial Risk Screening Worksheet for Soil
Former TAA 651A

Detected Chemical	Maximum TAA 651A Soil Concentration (mg/kg)	MCAS El Toro Background Concentration[a] (mg/kg)	CANCER			NON-CANCER		
			Industrial PRG[b] (mg/kg)	TAA 651A Maximum Ratio[c]	MCAS El Toro Background Ratio[d]	Industrial PRG[e] (mg/kg)	TAA 651A Maximum Ratio[f]	MCAS El Toro Background Ratio[f]
METALS								
Aluminum	19900	14800	NE	NE	NE	7.6E+04	2.62E-01	1.95E-01
Barium	160	173	NE	NE	NE	5.4E+03	2.96E-02	3.20E-02
Beryllium	.733	0.669	NE	NE	NE	1.9E+03	3.86E-04	3.52E-04
Cadmium	.642	2.35	NE	NE	NE	4.5E+02	1.43E-03	5.22E-03
Chromium	16.3	26.9	4.5E+02	3.62E-02	5.98E-02	NE	NE	NE
Cobalt	8.8	6.98	NE	NE	NE	4.7E+03	1.87E-03	1.49E-03
Copper	10.3	10.5	NE	NE	NE	2.9E+03	3.55E-03	3.62E-03
Manganese	278	8370	NE	NE	NE	3.2E+04	8.69E-03	2.62E-01
Vanadium	51.6	71.8	NE	NE	NE	1.4E+04	3.69E-03	5.13E-03
Zinc	54.5	77.9	NE	NE	NE	1.0E+05	5.45E-04	7.79E-04
Subtotal sum of ratios				3.62E-02	5.98E-02		4.98E-02	5.05E-01
MCAS EL TORO BACKGROUND RISK RATIOS			**CANCER RISK**		**5.98E-08**	**NON-CANCER HAZARD INDEX**		**0.50**
TAA 651A SUMMED RISK			**CANCER RISK**	**3.62E-08**		**NON-CANCER HAZARD INDEX**	**0.05**	
TAA 651A RISK LESS BACKGROUND RISK (NET RISK)			**NET CANCER RISK**	**$<1x10^6$**				

[a] *MCAS El Toro Background upper threshold limit concentrations from Final Technical Memorandum Background and Reference Levels, Bechtel National, Inc. 1996.*

[b] *Residential soil PRG for cancer from the EPA Region 9, November, 2002 list.*

[c] *The Ratio is determined by dividing the Concentration by the respective PRG.*

[d] *Where the background concentration exceeds the maximum concentration the background ratio was defaulted to the maximum ratio.*

[e] *Residential soil PRG for non-cancer from the EPA Region 9, November, 2002 list.*

[f] *The Ratio is determined by dividing the Concentration by the respective PRG. No ratios were calculated for chemicals detected below background levels.*

mg/kg - Milligrams per kilogram.

NE - Not established/No entry.

PRG - Prelimmary remediation goal.

APPENDIX A
2001 TAA 651A SUMMARY REPORT

Summary Report

Former Temporary Accumulation Area (TAA) Number 651A
Marine Corps Air Station, El Toro, California

15 October 2001

Prepared by:
Southwest Division, Naval Facilities Engineering Command
BRAC Programs Office
San Diego, CA 92101-2404

Summary Report

Former Temporary Accumulation Area (TAA) Number 651A
Marine Corps Air Station, El Toro, California

15 October 2001

Prepared by:

Lynn Marie Hornecker
Civil Engineer

Southwest Division, Naval Facilities Engineering Command
BRAC Programs Office
San Diego, CA 92101-2404

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Figure 3. Tentative Reuse Parcels

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Section 1
Introduction

The purpose of this Summary Report is to present information pertaining to Former Temporary Accumulation Area (TAA) Number 651A (TAA 651A) at the former exchange gas station at Building 651 in the northwestern section of the Marine Corps Air Station (MCAS), El Toro. TAA 651A was identified as SWMU 165 (a drum storage area) during the Resource Conservation and Recovery Act Facility Assessment (RFA) and the results of the investigation were presented in the *Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment Report for Marine Corps Air Station, El Toro, California* (Jacobs Engineering Group (JEG), 1993). SWMU 165 is located within the investigation boundary of SWMU 164 (a washrack). A sampling visit was conducted for SWMU 164, and the RFA Report recommended no further action status for SWMU 164 based upon the sampling visit results

The exchange facility at Building 651 was operated by the Morale, Welfare, and Recreation (MWR) program. The facility was used for minor maintenance of civilian vehicles. Building 651 included a gas station and vehicle maintenance station and was operated from approximately 1971 through December 1998.

Four underground storage tanks (USTs 651-1, 651-2, 651-3, and 651-4), three oil tanks (USTs 651-5, 651-6, and 651-7), one oil/water separator (OWS 651-8), and one above-ground propane tank (AST 651) were located at the exchange gas station. The three oil tanks, the oil/water separator site, and AST Site 651 have been closed Extracts from pertinent documents are included in the Appendix to this report.

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. Former TAA Site 651A is located in the northwestern section of the Station, at the intersection of North 4th Street and "C" Street, as shown on Figure 1.

The Station closed on 2 July 1999 in accordance with the Base Realignment and Closure Act of 1993 (BRAC III). Former TAA Site 651A is located within a parcel designated for future use as the terminal and parking area according to *The Preferred Land Use Plan, Concept B* (County of Orange, August 1999) as shown on Figure 2.

This Summary Report includes a description of information collected during previous environmental restoration program projects, extracts from pertinent documents, and an evaluation of the historical information. It is recommended that *no further action (NFA) status* be designated for Former TAA Site 651A in the next Base Realignment and Closure Business Plan Update because the RFA sampling visit did not identify a

significant release from SWMU 164, and SWMU 164 coincides with the location of Former TAA Site 651A. Additionally, no stains or evidence of deteriorated pavement were observed during the visual inspection of 27 August 2001.

Section 2
Field Inspections and Historical Records

2.1 Field Inspections

TAA 651A was originally identified as TAA 651 during the Resource Conservation and Recovery Act Facility Assessment (RFA). During the preparation of the RFA Addendum in 1995 and 1996 a second TAA was identified and this TAA has been designated as TAA 651B.

The washrack at Building 651 was identified as SWMU 164 during the RFA and TAA 651A is located on the washrack that is located on the loading dock on the southwest side of Building 651. Two portable metal sheds were installed on the loading dock and the metal sheds were removed from the site when the exchange gas station closed in approximately December 1998. One metal shed contained the air compressor and one metal shed was used as a temporary accumulation area (TAA 651A). The loading dock is a portland cement concrete structure, approximately 18 inches higher than the adjacent asphalt-paved parking area.

The loading dock has two rectangular areas, each surrounded by concrete berms, approximately 6 inches high. The metal sheds were located within the bermed areas. The berms were in excellent condition and no cracks were observed in the berms during recent visual inspections.

The former TAA Site 651A was visually inspected by Navy representatives during 1998 and 1999 when investigations for nearby tank sites were in progress. Additionally, an inspection was conducted on 27 August 2001. No stains, except rust stains, were observed on the portland cement concrete surface, and photographs of the site are included in the Appendix.

The exchange gas station closed in approximately December 1998, and the facility has been vacant since early 1999.

Surface runoff from the exchange facility discharges to drainage ditches on the east side of the facility, and these ditches discharge to Bee Canyon Wash. Surface water quality was monitored under the Station's National Pollutant Discharge Elimination System (NPDES) Permit for storm water while the Station was operational. Additionally, the surface drainage channels were investigated as IRP Site 25 –the Major Drainages – during the remedial investigation, and a Record of Decision for No Action was signed for IRP Site 25 in September 1997.

2.2 Historical Property Records and Environmental Program Management Plan Records

Property records and information from previously published environmental restoration program projects were acquired and reviewed, and information pertaining to the exchange gas station facility is summarized in Table 1.

Table 1. MCAS El Toro Property Records.
Building 651 (Exchange Gas Station)

Building Identification Number	Year of acquisition or construction	Type of Use	Comments
Exchange Gas Station			
Building 651	1971	Morale, Recreation, and Welfare (MWR) Exchange Gas Station and Vehicle Maintenance Station	Approximate building size: 13,839 square feet. Improvements made in approximately 1990.

2.3 Previously Completed Investigations in the Vicinity of Former TAA Site 651A

The Station's environmental compliance program management plans were acquired and reviewed in order to identify any locations at or near Former TAA Site 651A that were addressed during previous investigations and field sampling activities. No Further Action decision documents for nearby environmental locations of concern are presented in the Appendix.

Table 2 includes an overview of the types of data that have been collected within or near Former TAA Site 651A.

Table 2. Field Activities Conducted at or near Former TAA Site 651A.

Site Identification	Field Activities	Comments and/or Decision Documents
TAA 651A	Hazardous Materials/Hazardous Waste Management Plan (HM/HWMP) (SAIC, 1994) Visual Inspection Only	A photograph of TAA 651 which is included in the HM/HWMP dated 1994 shows a metal shed that was used for storage of waste. The 1994 HM/HWMP photograph shows the TAA 651A shed located within a bermed area on the loading dock.
TAA 651A	Storm Water Pollution Prevention Plan (SWPPP) (IEM 1997) Visual inspection was conducted in 1993. The SWPPP indicates that Building 651 personnel were trained in spill response and that a spill cleanup kit and Spill Prevention, Control, and Countermeasures Plan (SPCCP) were available at the site. No spills are identified at Building 651 in the Spill History table in the SWPPP.	The hazardous materials inventory in the SWPPP identifies the following materials at Building 651: • Liquefied petroleum gas • Gasoline and motor fuel • Solvents • Flammable liquids
Solid Waste Management Unit (SWMU) 164 and SWMU 165	SWMU 164 (a wash rack on a loading dock that coincides with the location of TAA 651A) was identified during the RFA (JEG, 1993) and a visual inspection was conducted in 1991. The RFA identified waste oil and possibly antifreeze as potential contaminants at SWMU 164 and a sampling visit was conducted. No further action status was agreed upon for SWMU 164 as documented in the RFA (JEG, 1993). SWMU 165 (drum storage area), located within SWMU 164, was visually inspected.	Soil samples were collected from two 60-foot angle borings (164A1 and 164A2) beneath the wash rack.
USTs 651-1, 651-2, 651-3, and 651-4	Each tank had a capacity of 12,000 gallons and tanks were used for gasoline storage. Tanks were removed and confirmation soil samples were collected on 21 July 1999 with oversight by OCHCA.	Soil vapor extraction (SVE) treatment of vadose zone is in progress as of September 2001.

Table 2. Field Activities Conducted at or near Former TAA Site 651A. (continued)

Site Identification	Field Activities	Comments and/or Decision Documents
UST 651-5 (SWMU 166) **UST 651-6** (SWMU 167) **UST 651-7** (SWMU 168)	Visual inspections were conducted at each tank site during the RFA; the tanks were identified as SWMUs 166, 167, and 168 Each tank had a capacity of 500 gallons. UST 651-5 was used for waste oil storage; USTs 651-6 and 651-7 were used for oil storage. Tanks were removed and confirmation soil samples were collected in April 1997. Soil samples were analyzed for TRPH per instruction from Orange County Health Care Agency (OCHCA).	OCHCA letter dated 11 July 1997. USTs 651-5, 651-6, and 651-7 were identified and visually inspected as SWMU 166, SWMU 167, and SWMU 168, respectively, during the RFA.
OWS 651-8	OWS received waste water from wash rack (SWMU 164) on southwest end of Building 651. Water was discharged through the wash rack drain to the sanitary sewer to the OWS located on the northwest side of Building 651 within approximately 50 feet of the wash rack. OWS survey by Law/Crandall included inspection of OWS 651-8 (it was identified as OWS 651/652 in this survey). OWS was taken out of service in 1998, and soil sampling was conducted for a site assessment report in September 1998. The maximum petroleum hydrocarbon concentration was 78 mg/kg (identified as unknown hydrocarbons)	RWQCB letter dated 28 September 2000.
Phantom OWS 652	Facility maps and records were reviewed, and visual inspections of the phantom site vicinity were conducted during 1998.	DTSC Letter dated 17 March 1999 And RWQCB Letter dated 3 November 1999
AST 651	Visual inspections of AST Site 651 were conducted (AST 651 was a 1,000-gallon propane tank).	RWQCB Letter dated 28 August 2000
TAA 651B	Temporary accumulation area located approximately 50 feet south of TAA 651A.	The TAA was visually inspected and shallow soil samples were collected in November 1995.

Oil/Water Separator (OWS) Site 651-8
Oil/Water Separator (OWS) Site 651-8 is located north of TAA 651A. OWS 651-8 received waste water from the service bays inside of Building 651 and from the drain on the loading dock which included TAA 651A.

Soil samples were collected adjacent to OWS 651-8 in 1998. OWS 651-8 and the associated drain pipe from the service bay within Building 651 were closed in place. Samples were analyzed by USEPA Method 8015-Modified (for gasoline, for diesel, and for JP-5) and by USEPA Method 8020 (BTEX with MTBE). Extracts from the closure documentation are provided in the Appendix.

Oil/Water Separator (OWS) Survey
A basewide OWS Survey was conducted by Law/Crandall in 1993, and the OWS at Building 651 (identified as OWS 651/652) was visually inspected in January 1993. The survey report identified fuel, oil, grease, antifreeze, and soap as potential components of the liquid wastes that were conveyed through the OWS. Extracts from the survey report are included in the Appendix.

Hazardous Materials/Hazardous Waste Management Plan (HM/HWMP)
Visual inspections of TAAs were conducted in 1993, and the HM/HWMP includes photographs of TAA 651A that was identified as MWR Auto #1. Extracts from the HM/HWMP are included in the appendix.

Storm Water Pollution Prevention Plan (SWPPP)
Visual inspections of areas where hazardous materials and hazardous wastes were stored were conducted in 1993.

The SWPPP identifies the storage of the following hazardous materials at Building 651: gasoline (in the underground tanks: USTs 651-1, 651-2, 651-3, and 651-4); liquid petroleum gas (in the above-ground tank: AST 651). The SWPPP also includes a spill history table in Section 5, and this table does not identify historic spills at Building 651.

Extracts from the SWPPP are included in the Appendix.

2.4 RFA Sampling Visit at SWMU 164 (wash rack)

During the RFA, a visual inspection was conducted at SWMU 164 (wash rack) in 1991 and a sampling visit was conducted in 1992. The wash rack coincides with the location of the former TAA 651A. The RFA documentation indicates that SWMU 165 (drum storage area that corresponds to TAA 651A) is located on the wash rack (SWMU 164).

A visual inspection record for SWMU 165 (drum storage area) was prepared. SWMU 165 coincides with TAA 651A, and the record indicates that waste oil was stored in the TAA.

The RFA sampling visit included two 60-foot angle soil borings at SWMU 164. The borings were located immediately adjacent to and southwest of the edge of the loading dock (SWMU 164). Samples were collected at ten-foot intervals and samples were analyzed for Total Recoverable Petroleum Hydrocarbons (TRPH) and Volatile Organic Compounds.

The maximum TRPH concentration of 571 milligrams per kilogram (mg/kg) was identified at a depth of 30 feet below ground surface (bgs). The duplicate sample that was collected at a depth of 30 feet bgs had a TRPH concentration of 167 mg/kg. TRPH was not identified at or above laboratory reporting limits in samples collected from boring 164A2.

Acetone and methylene chloride were detected at very low concentrations and/or were reported as estimated values (with *, "BJ"*, or "B"* qualifiers) in all of the samples. The qualifiers are defined in Table 3. A maximum acetone concentration of 24 micrograms per kilogram (ug/kg) (qualified "BJ") was identified in the 60-foot sample of boring 164A1 and this concentration is much lower than the USEPA Region 9 Preliminary Remediation Goal (November 2000) of 1,600 milligrams per kilogram (mg/kg).

The RFA laboratory results are summarized in Table 3.

Table 3. RFA Sampling Visit Soil Data for SWMU 164 (Wash Rack).

Sample Location and Depth (Feet bgs)	Analytical Data (Collected in 1992)	Comments
164A1 **Depth: 10 feet**	TRPH: ND Methylene Chloride: 7 "BJ" * ug/kg Acetone: 15 "B" * ug/kg	Boring 164A1 was located at the northwest end of the site. Subsurface materials are described primarily as sandy silt, and silty sand.
164A1 **Depth: 20 feet**	TRPH: ND Methylene Chloride: 11 "BJ" * ug/kg Acetone: 21 * ug/kg	
164A1 **Depth: 30 feet**	TRPH: 571 mg/kg Methylene Chloride: 10 "BJ" * ug/kg Acetone: 13 * ug/kg	
164A1 **Depth: 30 feet (duplicate)**	TRPH: 167 mg/kg Methylene Chloride: 5 "BJ" * ug/kg Acetone: 15 * ug/kg	
164A1 **Depth: 40 feet**	TRPH: 54 mg/kg Methylene Chloride: 10 "BJ" * ug/kg Acetone: 19 * ug/kg	
164A1 **Depth: 50 feet**	TRPH: ND Methylene Chloride: 10 "BJ" * ug/kg Acetone: 12 * ug/kg	
164A1 **Depth: 60 feet**	TRPH: 117 mg/kg Methylene Chloride: 9 "BJ" * ug/kg Acetone: 24 "B" * ug/kg	

Table 3. RFA Sampling Visit Soil Data for SWMU 164 (Wash Rack). (continued)

Sample Location and Depth (Feet bgs)	Analytical Data (Collected in 1992)	Comments
164A2 Depth: 10 feet	TRPH: ND Methylene Chloride: 7 "BJ" * ug/kg Acetone: 6 "BJ" * ug/kg	Boring 164A2 was located at the southeast end of the site Subsurface materials are described primarily as sandy silt, silty sand, poorly graded sand with silt, and silty claystone.
164A2 Depth: 20 feet	TRPH: ND Methylene Chloride: 7 "BJ" * ug/kg Acetone: 11 "BJ" * ug/kg	
164A2 Depth: 30 feet	TRPH: ND Methylene Chloride: 7 "BJ" * ug/kg	
164A2 Depth: 40 feet	TRPH: ND Methylene Chloride: 5 "BJ" * ug/kg Acetone: 4 "BJ" * ug/kg	
164A2 Depth: 50 feet	TRPH: ND Methylene Chloride: 6 "BJ" * ug/kg Acetone: 9 "BJ" * ug/kg	
164A2 Depth: 60 feet	TRPH: ND Methylene Chloride: 4 "BJ" * ug/kg Acetone: 11 "BJ" * ug/kg	

EXPLANATION OF DATA QUALIFIERS (JEG 1993):
* Qualified as not detected by data validation due to laboratory-introduced contamination
B Compound also detected in laboratory blank
J Estimated value below CRDL

2.5 Ground Water Conditions

Ground water conditions have been investigated in the vicinity of TAA 651A during the investigation of the gasoline release at former UST Sites 651-1 through 651-4 (also known as UST Group 651). Groundwater is located at approximately 140 feet bgs near Building 651. Gasoline has impacted the groundwater beneath UST Group 651, and the groundwater plume is managed under the Station's petroleum corrective action program.

Section 3
Findings and Recommendations

The following findings are based upon information collected during the record search activities, the RFA Sampling Visit, and from observations during the visual inspections of the vicinity of TAA 651A:

- JEG identified SWMU 164 – a wash rack that coincides with the location of former TAA 651A – and SWMU 165 (a drum storage area on the wash rack) during the Resource Conservation and Recovery Act Facility Assessment (RFA). Contaminants of potential concern were identified, a visual inspection was conducted, and soil sampling activities were conducted at SWMU 164. The RFA identified a maximum Total Recoverable Petroleum Hydrocarbon (TRPH) concentration of 571 mg/kg in boring 164A1. Volatile organic compounds identified during the RFA were believed to be attributable to laboratory contamination. The RFA recommendation was no further action for SWMU 164. The RFA also identified SWMU 165, a drum storage area, that was located within the boundary of SWMU 164.
- Former TAA Site 651A is located near oil/water separator (OWS) 651-8 that received waste water from the wash rack (SWMU 164). Soil samples were collected from borings adjacent to OWS 651-8 during site assessment activities and the Regional Water Quality Control Board, Santa Ana Region concurred with no further action status on 28 September 2000.

Based upon the absence of visual evidence of releases to the pavement in and around the former Temporary Accumulation Area 651A, the evaluation of the sampling data from the RFA sampling visit, and the information collected during the closure of OWS 651-8, it is recommended that *no further action status* be designated for TAA 651A and that *no further action status* with ECP identifier number 3 be documented in the next BRAC Business Plan Update.

Section 4
References and/or Sources of Information

CDM Federal Programs Corporation. 1998. Final Groundwater Monitoring Report, October 1997 Sampling Round, Groundwater Monitoring Program for Marine Corps Air Station, El Toro. [Navy Contract N68711-96-D-2029, Delivery Order 5]

County of Orange. 1999. Preferred Land Use Plan, Concept B. August. [prepared by the MCAS El Toro Local Redevelopment Authority]

Integrated Environmental Management (IEM). 1997. Storm Water Pollution Prevention Plan (SWPPP) for Marine Corps Air Station, El Toro, El Toro, California. July. [Contract No. N68711-96-D-2059, Delivery Order Number 0002] {*Annotation: The IEM planning document included the acquisition and review of historical and current plans of facilities and utilities. Extracts from the IEM report are presented in the Appendix.*}

Jacobs Engineering Group (JEG). 1993. Installation Restoration Program, Final Resource Conservation and Recovery Act Facility Assessment Report for Marine Corps Air Station, El Toro, California. [Navy Contract N68711-89-D-9296, Contract Task Order 193]

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Law/Crandall, Incorporated. 1993. Oil/Water Separator Survey, El Toro Marine Corps Air Station, El Toro, California. April. [Navy Contract N68711-92-D-4652, Delivery Order 1.]

Science Applications International Corporation (SAIC). 1994. Final, Marine Corps Air Station, El Toro, Hazardous Material/Hazardous Waste Management Plan {with Appendices C and I, Hazardous Waste Accumulation Areas and Photographs of Accumulation Points and Hazardous Material Storage Areas}. August. [Contract N68711-92-D-4658, Delivery Order Number 4].]

United States Marine Corps Air Station, El Toro. 2001. Base Realignment and Closure (BRAC) Business Plan.

United States Marine Corps Air Station, El Toro. Circa 1946-1999. Station Property Records and Building Guides.

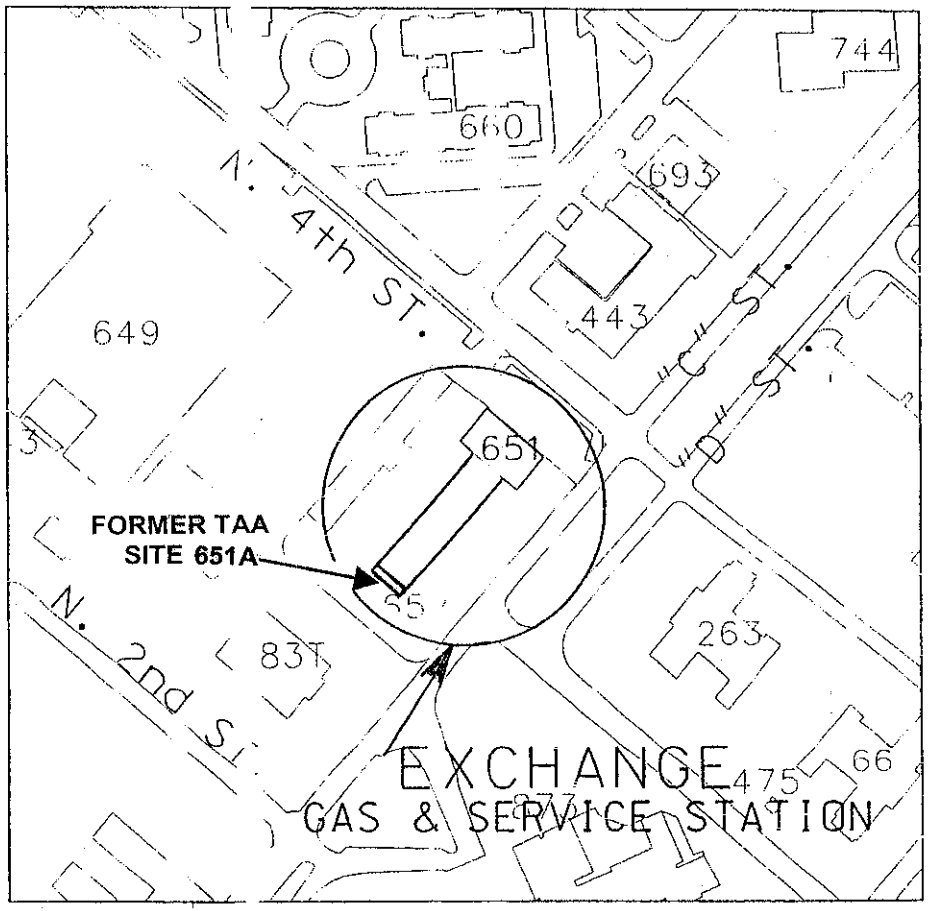
U.S. Marine Corps Air Station, El Toro. 1997. Draft Final Record of Decision, Operable Units 2A and 3A, No Action Sites, Marine Corps Air Station, El Toro, California.

September.

United States Marine Corps Air Station, El Toro, Public Works Department. 1954. Master Plot Plan, Proposed Additional Aircraft Parking Facilities in Tactical Area III and Proposed Relocation of Existing Stables. [Alternate drawing identification number Public Works drawing PS-1236]

United States Marine Corps Air Station, El Toro. 1994. Aerial Photograph

United States Marine Corps Air Station, El Toro. 1997-2000. No Further Action correspondence from RWQCB, OCHCA, and/or DTSC.



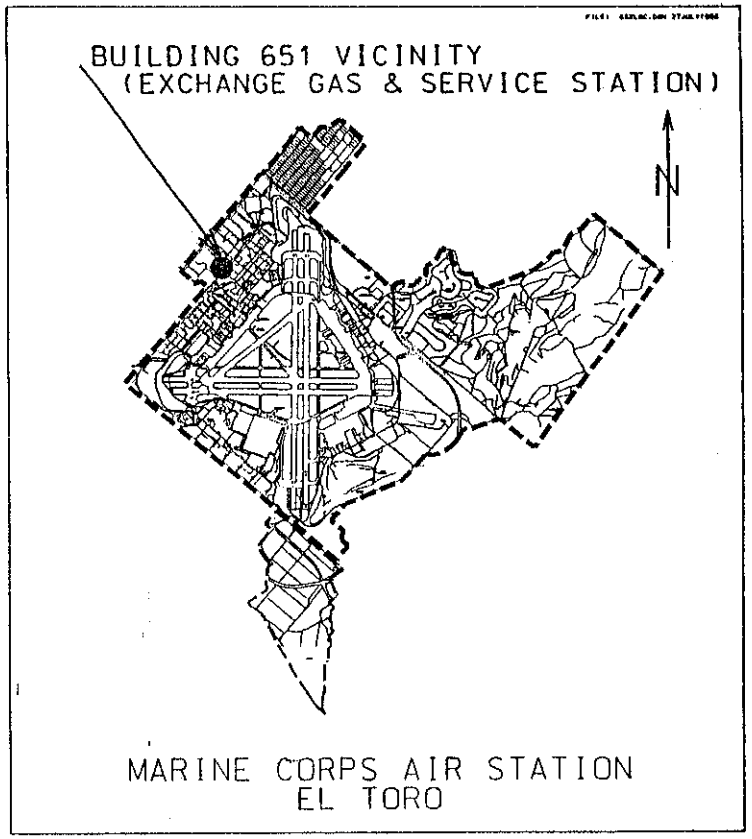
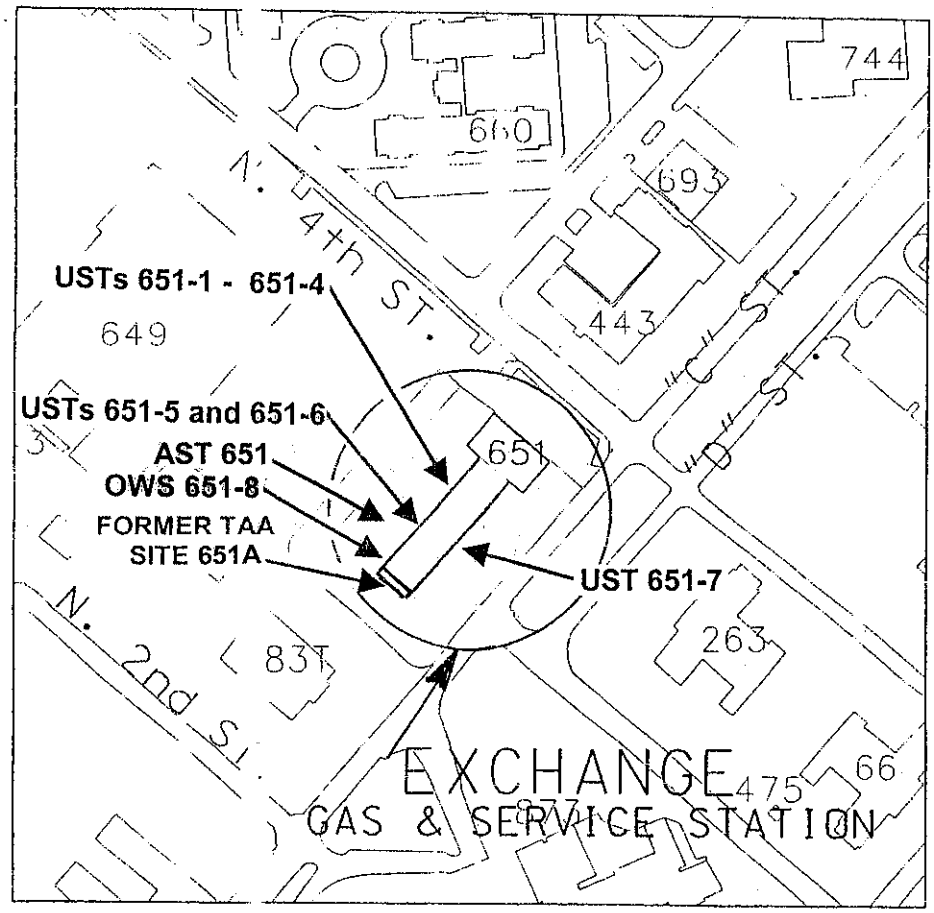


Figure 1.

FORMER TEMPORARY ACCUMULATION AREA
(TAA) SITE 651A

VICINITY MAP

MARINE CORPS AIR STATION, EL TORO



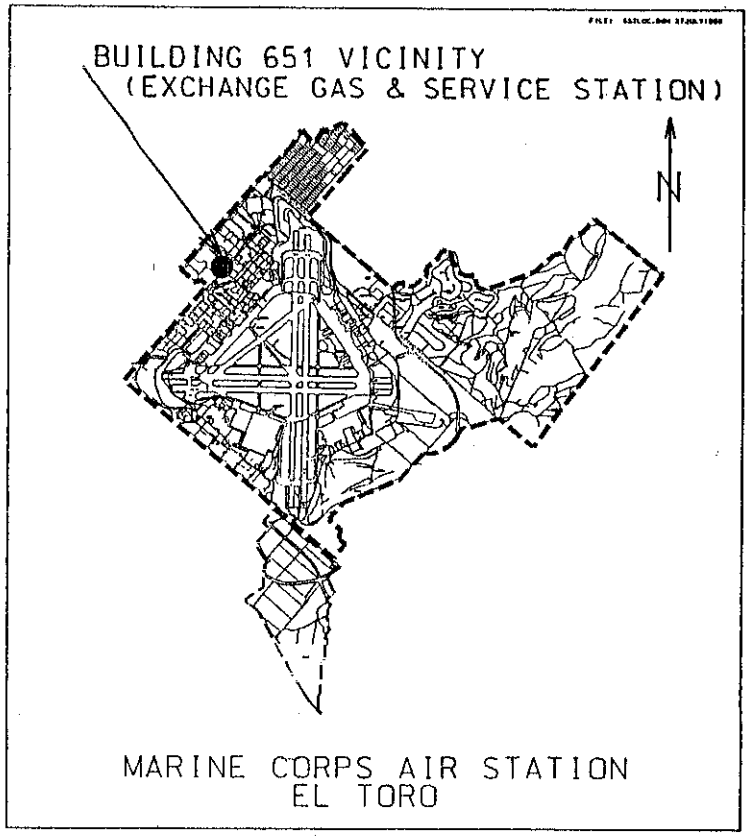
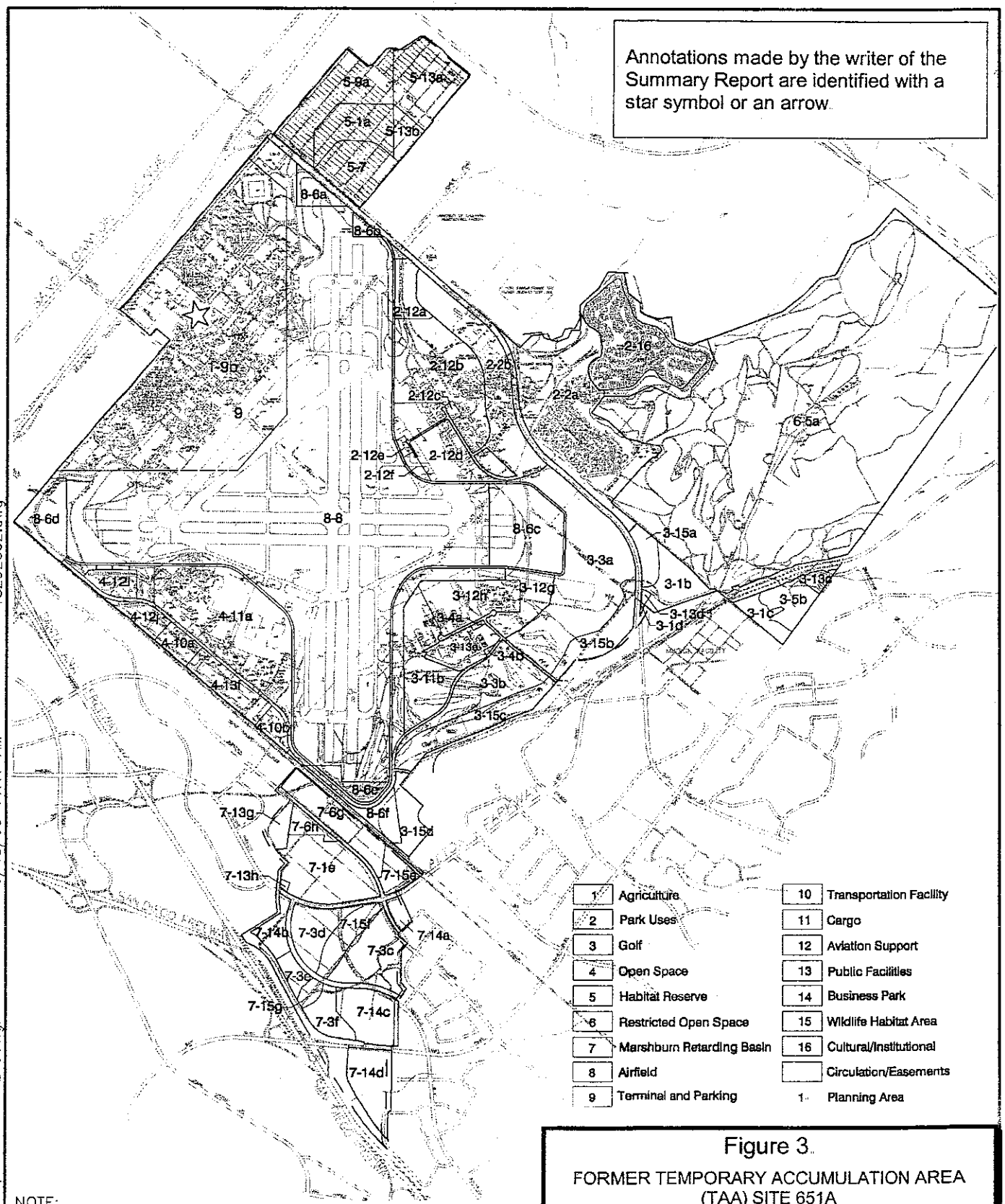


Figure 2.

FORMER TEMPORARY ACCUMULATION AREA (TAA) SITE 651A

NEARBY ENVIRONMENTAL LOCATIONS OF CONCERN

MARINE CORPS AIR STATION, EL TORO



NOTE:
PARCEL IDENTIFIERS ARE PROVIDED FOR THE PURPOSE OF ILLUSTRATION AND ARE SUBJECT TO FINAL DESIGN AND PHASING.

Source of Reuse Information: County of Orange (1999)

Figure 3.

FORMER TEMPORARY ACCUMULATION AREA (TAA) SITE 651A

TENTATIVE REUSE PARCEL LOCATIONS

MARINE CORPS AIR STATION, EL TORO

Jane Witzel-Yanez, Witzel-Yanez Design 5/18/00 11:17 AM 18292602.dwg

Appendix

Site Photographs and Other Documentation

Site Photographs

Extracts from RFA Documentation

Extracts from HM/HWMP

Extracts from Storm Water Pollution Prevention Plan (SWPPP)

Extracts from Property Records and 1997 Building Guide

Extracts from Environmental Baseline Survey Documentation

Extracts from Law/Crandall Oil/Water Separator Survey

Extracts from Base Realignment and Closure Business Plan

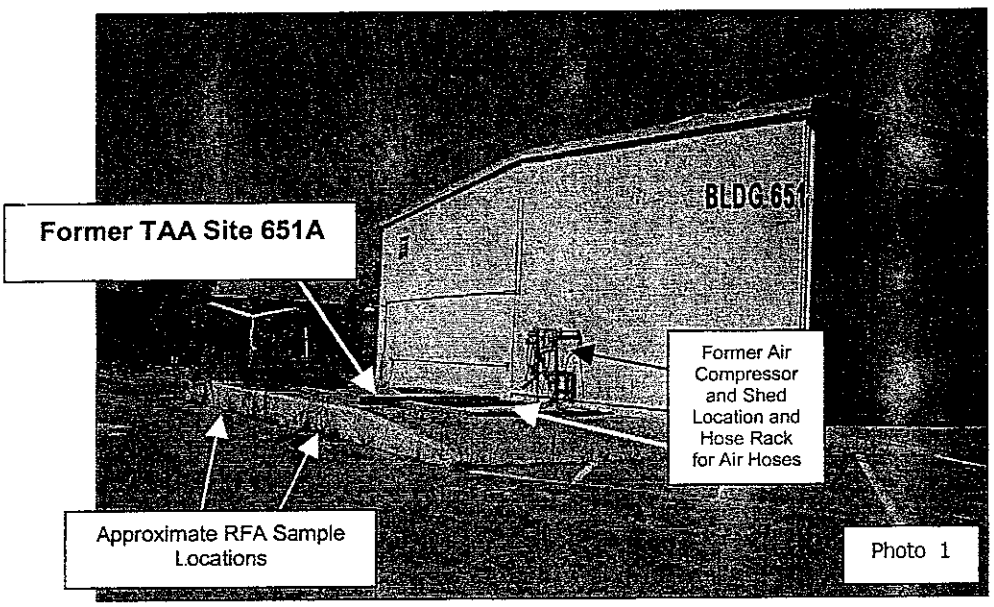
No Further Action Decision Documents for Nearby Locations of Concern

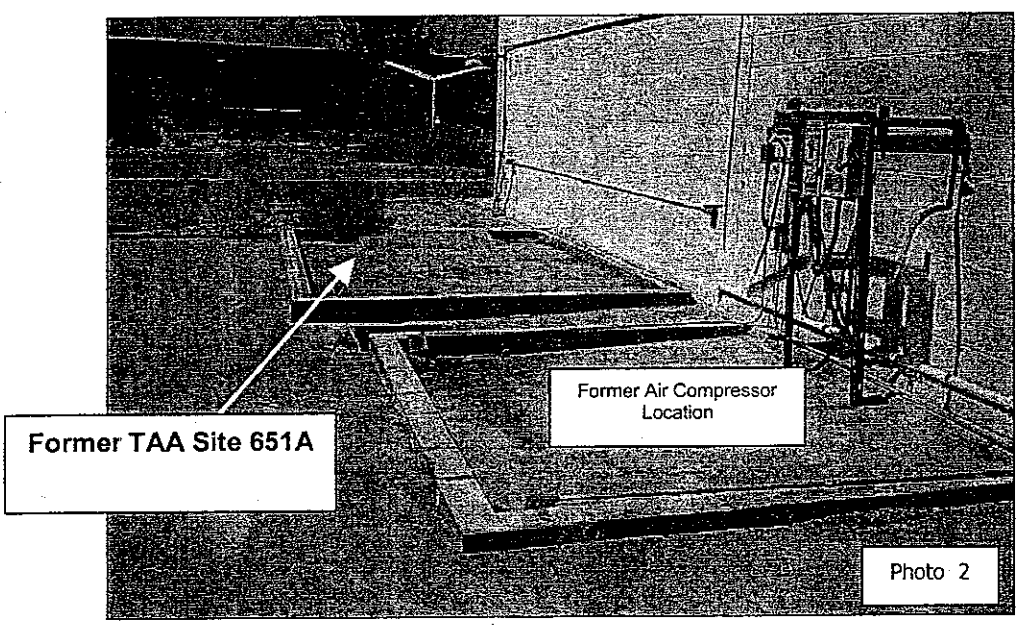
SOUTHWEST NAVFACENGCOM
Code 06CC LMH
1220 Pacific Highway
San Diego California 92132-5190

File: ettaa651photos.doc

Photographs 1 and 2. Former Temporary Accumulation Area (TAA) 651A Also Known As Solid Waste Management Unit (SWMU) 165 And Former Wash Rack (SWMU 164) Marine Corps Air Station, El Toro

Date of Photographs: 27 August 2001



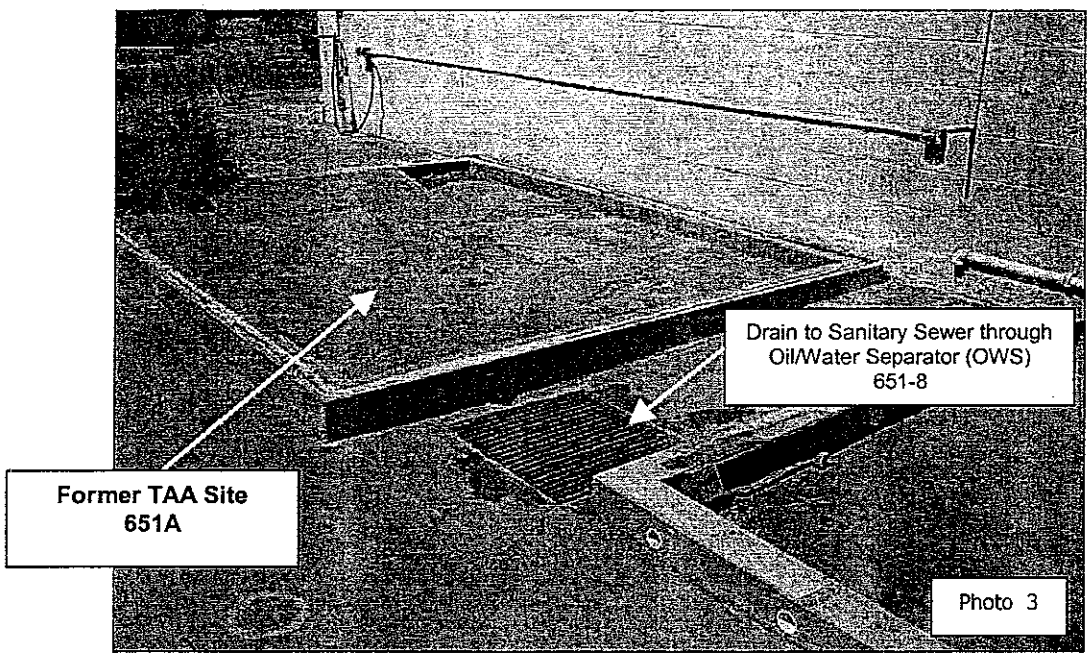


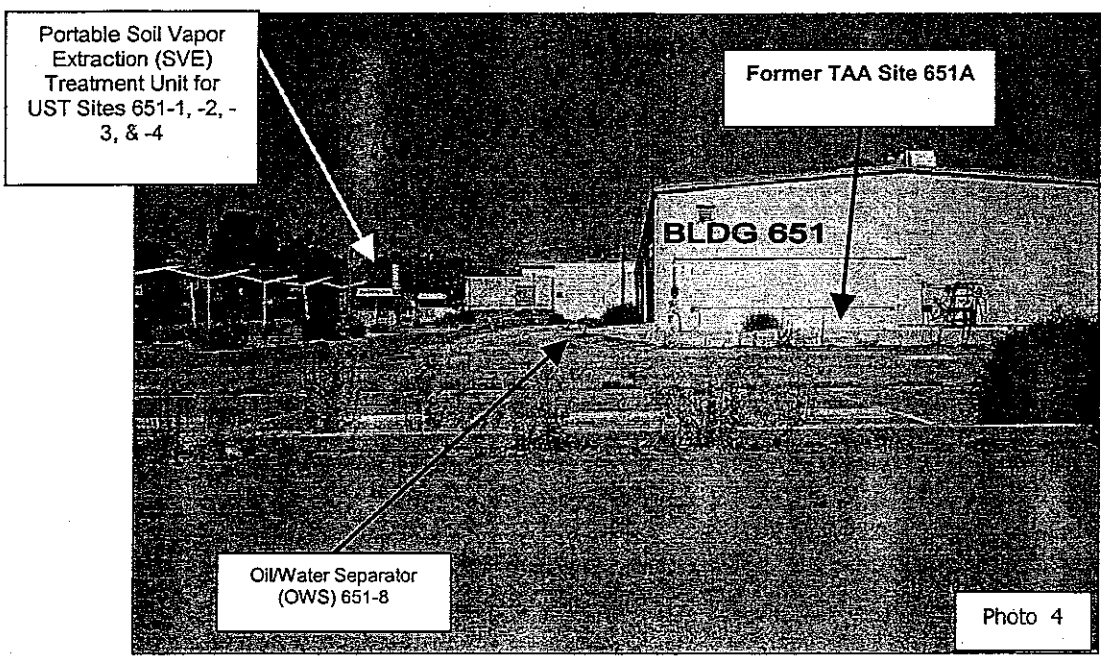
SOUTHWESTNAVFACENGCOM
Code 06CC.LMH
1220 Pacific Highway
San Diego, California 92132-5190

File: ettaa651photos.doc

Photographs 3 and 4. Former Temporary Accumulation Area (TAA) 651A
Marine Corps Air Station, El Toro

Date of Photographs: 27 August 2001

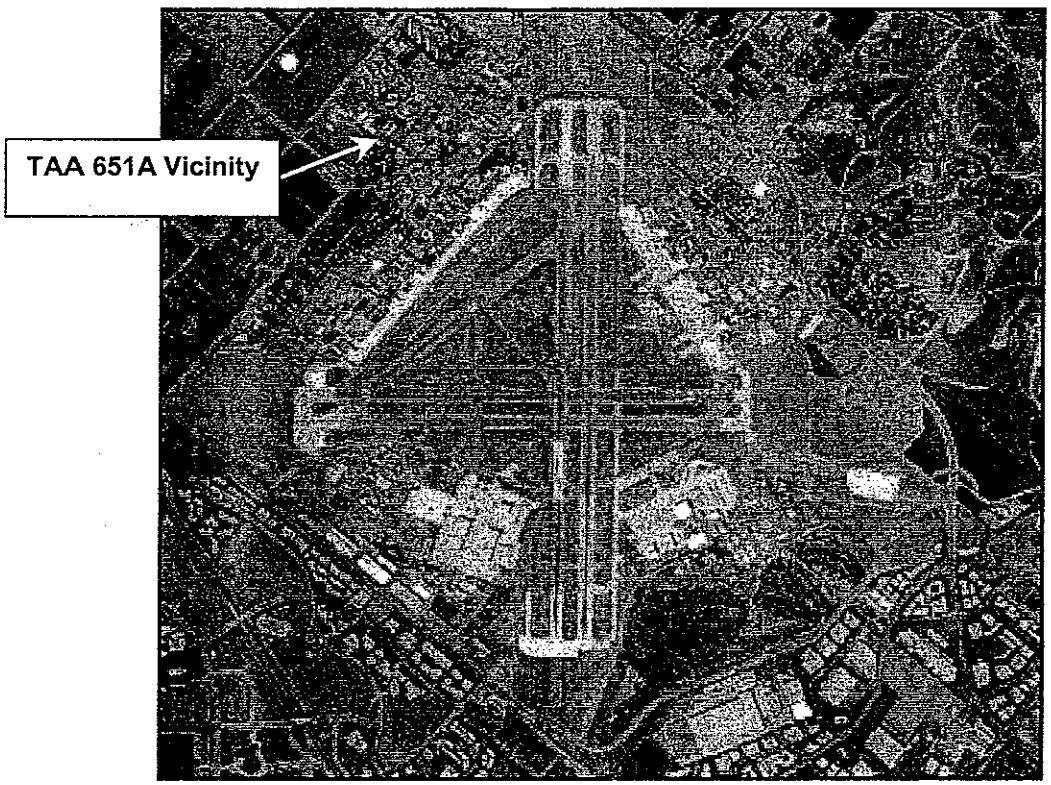




SOUTHWESTNAVFACENGCOM
Code 06CC.LMH
1220 Pacific Highway
San Diego, California 92132-5190

Photograph 5. Vicinity of Former Temporary Accumulation Area (TAA) 651A
Marine Corps Air Station, El Toro

Date of Aerial Photograph: 1994



MARINE CORPS AIR STATION EL TORO
EL TORO, CALIFORNIA
INSTALLATION RESTORATION PROGRAM
FINAL RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) FACILITY ASSESSMENT REPORT

VOLUME I

16 July 1993

EXTRACTS

Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow

PREPARED BY:
Southwest Division Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5190

THROUGH:
CONTRACT #N68711-89-D-9296
CTO #193
DOCUMENT CONTROL NO:
CLE-C01-01F193-S2-0001

WITH:
Jacobs Engineering Group Inc.
3655 Nobel Drive, Suite 200
San Diego California 92122

In association with:
International Technology Corporation
CH2M HILL

Table 6-15
Recommendations for SWMUs/AOCs
MCAS El Toro RFA

SWMU No.	SWMU/AOC Type	Recommendation (FA/NFA)	Description of Further Action	Rationale for Further Action
160	Hazardous Waste Storage Area	NFA	--	--
162	Underground Storage Tank	NFA	--	--
164	Vehicle Wash Rack	NFA	--	--
171	Hazardous Waste Storage Area	FA	Shallow soil borings	Potential for SVOCs in surface soil
172	Hazardous Waste Storage Area	NFA	--	--
173	Oil/Water Separator	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
175	Oil/Water Separator	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
176	Underground Storage Tank	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
179	Oil/Water Separator	NFA	--	--
181	Landfarming Area	NFA	--	--
186	Hazardous Waste Storage Area	NFA	--	--
187	Underground Storage Tank	NFA	--	--
188	Underground Storage Tank	NFA	--	--
193	Oil/Water Separator	NFA	--	--
194	Former Incinerator Site	FA	Additional boring(s)	Petroleum hydrocarbon contamination, unknown extent
195	Vehicle Wash Rack	NFA	--	--
196	Oil/Water Separator	NFA	--	--
198	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
199	Oil/Water Separator	FA	Leak test/ inspection of separator	Moderate petroleum hydrocarbon contamination at 15-foot dept
201	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
202	Underground Storage Tank	NFA	--	--
204	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
205	Oil/Water Separator	NFA	--	--
208	Oil/Water Separator	NFA	--	--
211	Oil/Water Separator	NFA	--	--
213	Vehicle Wash Rack	FA	Repair cracks in pavement	Prevent future migration of petroleum hydrocarbons
214	Underground Storage Tank	NFA	--	--
220	Oil/Water Separator	NFA	--	--
222	Hazardous Waste Storage Area	NFA	--	--
223	Hazardous Waste Storage Area	NFA	--	--

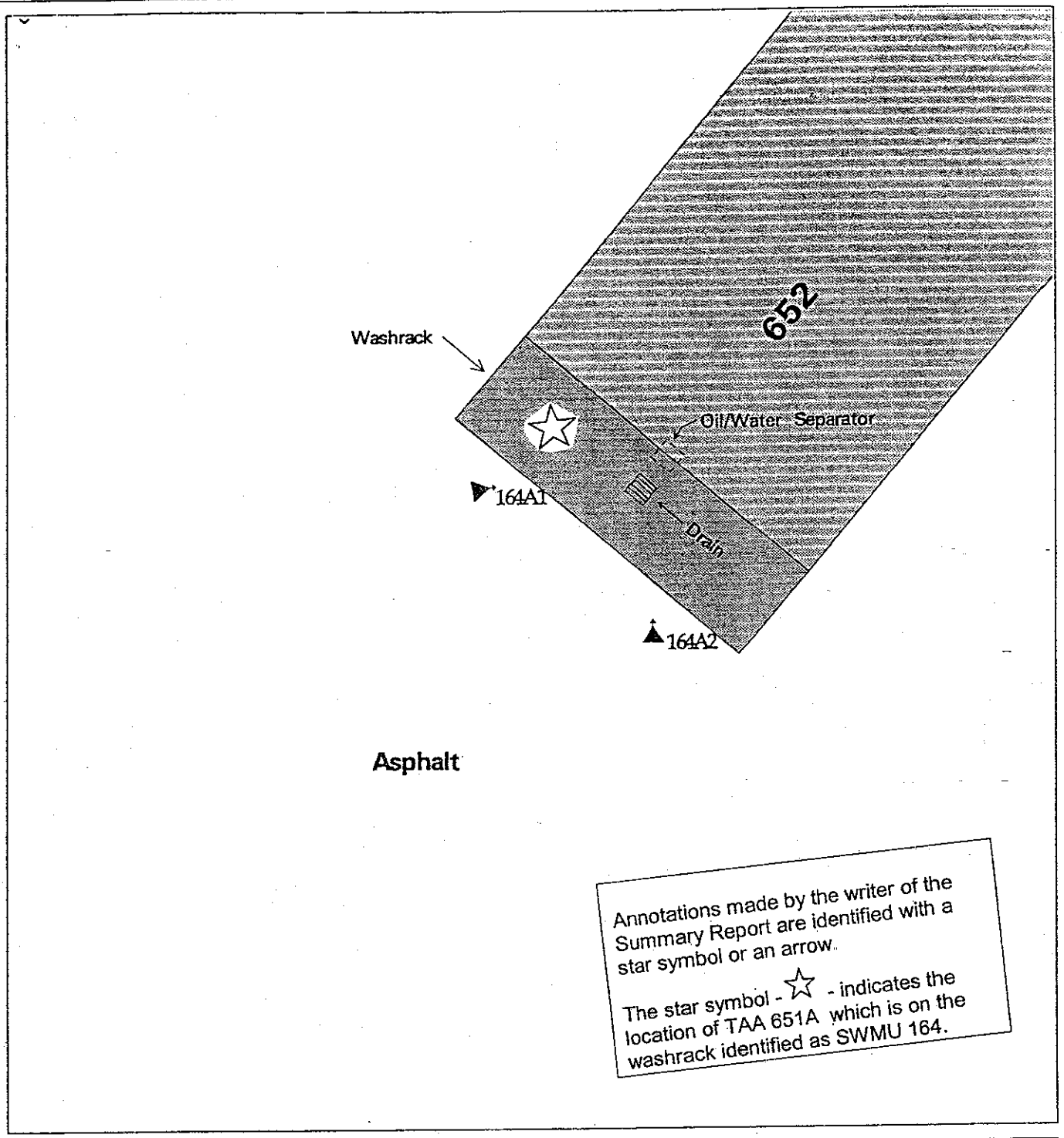


Figure 51 Sample Location Map

SWMU/AOC Number and Type:

164 - Vehicle Washrack

Boring Location and Number:

- 123H4 5′ Deep Boring
- 123B4 25′ Deep Boring
- 123A4 60′ Long, Angle Boring

Features:

- Building
- Concrete
- Fence
- Railroad

Scale

0 10 20 40 Feet

MCAS El Toro
RCRA Facility Assessment

MCAS EL TORO RCRA FACILITY ASSESSMENT – SAMPLING VISIT RESULTS

SWMU/AOC NUMBER	SWMU/AOC TYPE (FIGURE)	BORING NUMBER	SAMPLE DEPTH (FEET)	ANALYTICAL TEST RESULTS: TPH (mg/kg)	TFH (mg/kg) Gasoline	TFH (mg/kg) Diesel	VOCs (ug/kg)	SVOCs (ug/kg)	PESTICIDES/PCBs (ug/kg)	METALS (mg/kg)	RECOMMENDATIONS: Action	RECOMMENDATIONS: Rationale
164	Vehicle Wash Rack (51)	A1	10	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-15 B *	NA	NA	NA	NFA	TPH/TFH < 1000 ppm VOCs < CRDL
			20	ND	NA	NA	Methylene Chloride-11 B * Acetone-21 *	NA	NA	NA		
			30	571	NA	NA	Methylene Chloride-10 BJ * Acetone-13 *	NA	NA	NA		CRDL - Contract Required Detection Limits
			30 (Duplicate)	167	NA	NA	Methylene Chloride-5 BJ * Acetone-15 *	NA	NA	NA		
			40	54	NA	NA	Methylene Chloride-10 BJ * Acetone-19 *	NA	NA	NA		
			50	ND	NA	NA	Methylene Chloride-10 BJ * Acetone-12 *	NA	NA	NA		
			60	117	NA	NA	Methylene Chloride-9 BJ * Acetone-24 B *	NA	NA	NA		
		A2	10	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-6 BJ *	NA	NA	NA		
			20	ND	NA	NA	Methylene Chloride-7 BJ * Acetone-11 BJ *	NA	NA	NA		
			30	ND	NA	NA	Methylene Chloride-7 BJ *	NA	NA	NA		
			40	ND	NA	NA	Methylene Chloride-5 BJ * Acetone-4 BJ *	NA	NA			
			50	ND	NA	NA	Methylene Chloride-6 BJ * Acetone-9 BJ *	NA	NA			
			60	ND	NA	NA	Methylene Chloride-4 BJ * Acetone-11 BJ *	NA	NA			

Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow.

☆ EXPLANATION OF DATA QUALIFIERS (JEG 1993):

- * Qualified as not detected by data validation due to laboratory-induced contamination.
- B Compound also detected in laboratory blank
- J Estimated value below CRDL
- NA Not analyzed
- ND Below CRDL

CH2M HILL

PROJECT NUMBER	BORING NUMBER
LA070022 S0.10	164A-1 SHEET 1 OF 2

SOIL BORING LOG

PROJECT NAVY CLEAN RCRA FACILITY ASSESSMENT LOCATION MCAS-EL TORO

ELEVATION _____ DRILLING CONTRACTOR BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA

DRILLING METHOD AND EQUIPMENT HSA, 3-1/4 ID, 6-1/2 OD, INGERSOL-RAND TH-10

WATER LEVELS _____ START 11/10/92 FINISH 11/10/92 LOGGER C. POLITO

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY SOIL STRUCTURE MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
						Begin drilling at 09:00
5.0						
10.0	10.0–12.0	1-MC	1.8	6-6-11-13	SILTY SAND (SM), dark brown, moist, medium dense fine grained trace mica	HNu=0 ppm OVA=0 ppm
15.0						
20.0	20.0–22.0	2-MC	1.5	16-20-22-25	Similar to 1-MC	HNu=3.0 ppm OVA=0 ppm
25.0						
30.0	30.0–32.0	3-MC	2.0	8-16-17-20	SANDY SILT (ML) brown moist very stiff micaceous fine grained sand	HNu=1.0 ppm OVA=3.0 ppm

CH2M HILL

PROJECT NUMBER	BORING NUMBER
LA070022.S0.10	164A-1

SOIL BORING LOG

PROJECT NAVY CLEAN RCRA FACILITY ASSESSMENT LOCATION MCAS-EL TORO

ELEVATION _____ DRILLING CONTRACTOR BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA

DRILLING METHOD AND EQUIPMENT HSA, 3-1/4" ID, 6-1/2" OD, INGERSOL-RAND TH-10

WATER LEVELS _____ START 11/10/92 FINISH 11/10/92 LOGGER C. POLITO

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
40.0	40.0–42.0	4-MC	15	20-20-25-28	Similar to 3-MC hard	HNU=1.0 ppm OVA=0 ppm
45.0						
50.0	50.0–52.0	5-MC	1.8	17-26-35-35	Similar to 4-MC	HNu=1.0 ppm OVA=0 ppm
55.0						
60.0	60.0–62.0	6-MC	1.9	11-14-22-23	SANDY SILT TO SILTY SAND (ML-SM), brown, moist, very stiff to medium dense fine to medium grained sand	HNu=0 ppm OVA=0 ppm
					Total Depth at 62.0 Feet	
65.0						

CH2M HILL

PROJECT NUMBER	BORING NUMBER
LA070022 S010	164A-2 SHEET 1 OF 2

SOIL BORING LOG

PROJECT NAVY CLEAN RCRA FACILITY ASSESSMENT LOCATION MCAS-EL TORO

ELEVATION _____ DRILLING CONTRACTOR BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA

DRILLING METHOD AND EQUIPMENT HSA, 3-1/4 ID, 6-1/2 OD, INGERSOL-RAND TH-10

WATER LEVELS NOT ENCOUNTERED START 11/11/92 FINISH 11/11/92 LOGGER C. POLITO

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY SOIL STRUCTURE MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
						Start drilling at 12:45
5.0						
10.0	10.0–12.0	1-MC	2.0	8-10-17-20	SILTY SAND (SM), brown, moist medium dense fine to medium grained trace mica	HNu=0 ppm
15.0						
20.0	20.0–22.0	2-MC	2.0	13-21-38-49	Similar to 1-MC very dense	HNu=0 ppm OVA=3.0 ppm
25.0						
30.0	30.0–32.0	3-MC	2.0	23-36-40-40	SANDY SILT (ML), brown moist hard fine grained sand micaceous	HNu=0 ppm OVA=2.0 ppm

PROJECT NUMBER	BORING NUMBER
LA070022.S0.10	164A-2 SHEET 2 OF 2

SOIL BORING LOG

PROJECT NAVY CLEAN RCRA FACILITY ASSESSMENT LOCATION MCAS-EL TORO

ELEVATION _____ DRILLING CONTRACTOR BEYLIK DRILLING, INC., LA HABRA, CALIFORNIA

DRILLING METHOD AND EQUIPMENT HSA, 3-1/4 ID, 6-1/2 OD, INGERSOL-RAND TH-10

WATER LEVELS NOT ENCOUNTERED START 11/11/92 FINISH 11/11/92 LOGGER C. POLITO

DEPTH BELOW SURFACE (FT)	SAMPLE INTERVAL	SAMPLE TYPE AND NUMBER	SAMPLE RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"-6"-6" (N)	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY SOIL STRUCTURE MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE DRILLING FLUID LOSS TESTS AND INSTRUMENTATION
40.0	40.0–42.0	4-MC	2.0	32-45-55-70	SILTY SAND (SM), brown moist very dense fine grained	HNu=0 ppm OVA=1.0 ppm
45.0						
50.0	50.0–52.0	5-MC	2.0	20-45-50-91	POORLY GRADED SAND WITH SILT (SP-SM), brown, moist very dense, medium to fine grained sand	HNu=0 ppm OVA=1.0 ppm
55.0						
60.0	60.0–62.0	6-MC	2.0	75-87-100 -100/5"	SILTY CLAYSTONE (CL/ML), brown moist hard some fine grained sand	HNu=0 ppm OVA=0 ppm
					Total Depth at 62.0 Feet	
65.0						

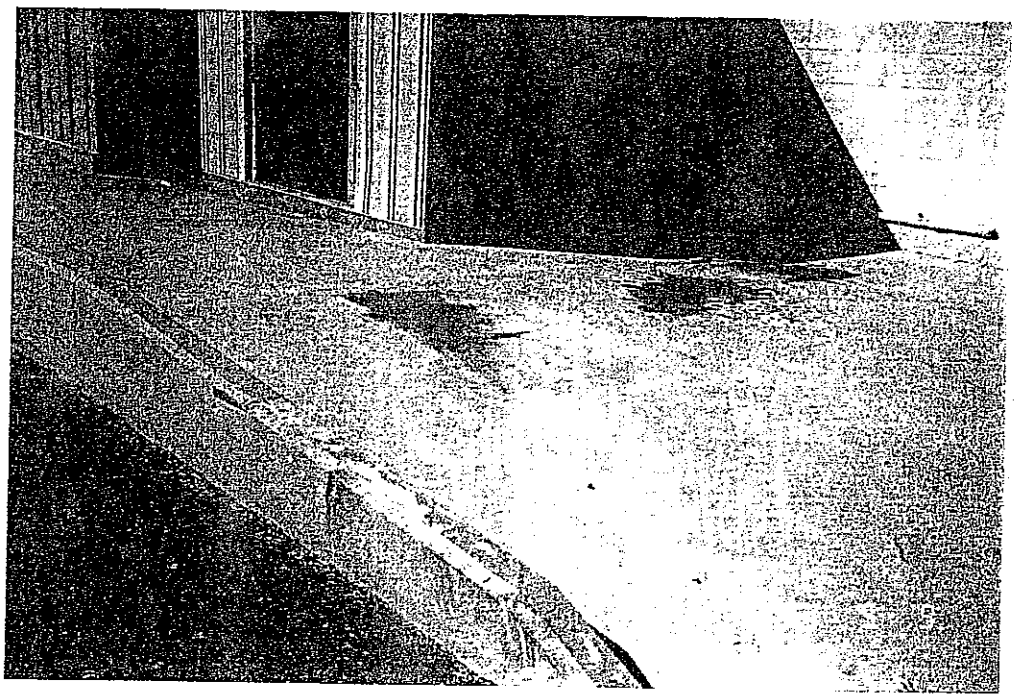
Evaluation Form
SWMU/Area of Concern
Number 164

Name: Vehicle Washrack

Location: Adjacent to the west wall of Building 651

Size: 465 sq ft

Date of Site Visit: 09 May 1991



Period of Operation

Currently inactive

Evaluation Form
SWMU/Area of Concern
Number 164

Unit Characteristics

A vehicle washrack is located adjacent to the western wall of Building 652. The washrack consists of a 15-ft x 31-ft concrete wash pad, which is elevated approximately 2 ft. Concrete ramps extend approximately 9 ft north and south of the pad The pad has a concrete berm along the western side, which also borders the concrete ramps. A drain leading to an oil/water separator (SWMU/AOC Number 169) is located in the center of the washpad. A liquid approximately 1 ft below grade was observed in the drain The liquid appeared green in color, resembling antifreeze The pad is bordered by asphalt pavement on the western side and on the northern and southern sides beyond the concrete ramps, and abuts the western wall of Building 651 to the east The washrack is no longer active.

According to the Assistant Manager at the service station, approximately 10 drums of unknown waste types were formerly stored on the northeastern portion of the washrack. This individual stated that the removal of the drums was completed approximately 6 months prior to the VSI A metal storage shed currently occupies the former storage area The Assistant Manager also said that several 55-gallon drums of waste oil and unknown wastes are currently kept in the storage shed At the time of the VSI, the storage shed was locked and could not be accessed

Waste Characteristics

Oily water
Antifreeze
Unknown wastes (probably waste automotive fluids)

Possible Migration Pathways

Storm drain
Oil/water separator
Soil

Evidence of Release

None observed

Exposure Potential

On-Station personnel

Evaluation Form
SWMU/Area of Concern
Number 164

Recommendations

Although there is no evidence of a release, this washrack has been used for storage of hazardous waste. A sampling visit is recommended for this reason.

It should also be noted that the receptors of the wash water (i.e., the drainage channels via the storm drain and the oil/water separator) are identified as SWMUs/AOCs recommended for a sampling visit.

Evaluation Form
SWMU/Area of Concern
Number 165

Name: Drum Storage Area

Location: Adjacent to the western wall of Building 651

Size: Approximately 100 sq ft

Date of Site Visit: 09 May 1991

A letter from the RWQCB to Lt. Rehor dated 23 June 23 1989 identified a DSA located near Building 651. Building 651 currently operates as an automobile service station. The DSA referenced in this letter is located within the vehicle washrack area (SWMU/AOC Number 164) adjacent to the western wall of Building 651. See the Evaluation Form for SWMU/AOC Number 164 for a description of this DSA located at Building 651.

Evaluation Form
SWMU/Area of Concern
Number 166

Unit Characteristics

UST 651-5 is located north of Building 651 between the third and fourth work bays of the automobile service station. Based on the site visit, the 500-gallon steel tank is used to store product oil. (A report by EG&G listed this tank as storing waste oil.) It was installed in 1971 and is currently active. The fill box for the tank is identified by a 1-ft-diameter metal cover at grade, located approximately 5 ft from the northern wall of Building 651. The metal cover is situated approximately 1 ft north of the metal cover for UST 651-6 (SWMU/AOC Number 167). The ground surface around the covers is asphalt-paved. A dark circular stain extends approximately 6 in. around the metal cover. The vents for the tank are located directly north of the fill box, adjacent to the northern wall of Building 651.

Waste Characteristics

Product oil

Possible Migration Pathways

Soil

Evidence of Release

Stained asphalt around fill box

Exposure Potential

On-Station personnel

Recommendations

This UST passed a tank test conducted in 1990 under CTO #0006-01 in the Navy CLEAN Program. The stained asphalt around the fill box represents minor spillage during loading/unloading operations that has not impacted underlying soil. No further action is recommended for this SWMU/AOC.

Evaluation Form
SWMU/Area of Concern
Number 167

Name: Underground Storage Area 651-6

Location: North of Building 651

Size: 500 gallons

Date of Site Visit: 09 May 1991

Period of Operation

Installed in 1971
Currently active

Evaluation Form
SWMU/Area of Concern
Number 167

Unit Characteristics

UST 651-6 is located north of Building 651 between the third and fourth work bays of the automobile service station Based on the site visit, the 500-gallon steel tank is used to store product oil. (A report by EG&G listed this tank as storing waste oil.) It was installed in 1971 and is currently active. The fill box for the tank is identified by a 1-ft-diameter metal cover at grade, located approximately 5 ft from the northern wall of Building 651. The metal cover is situated approximately 1 ft south of the metal cover for UST 651-5 (SWMU/AOC Number 166). The ground surface around the covers is asphalt-paved. Some stains on the asphalt around the covers is apparent. The vents for the tank are located directly north of the fill box, adjacent to the northern wall of Building 651.

Waste Characteristics

Product oil

Possible Migration Pathways

Soil

Evidence of Release

Stained asphalt around fill box

Exposure Potential

On-Station personnel

Recommendations

This UST passed a tank test conducted in 1990 under CTO #0006-01 in the Navy CLEAN Program. The stained asphalt around the fill box represents minor spillage during loading/unloading operations that has not impacted underlying soil No further action is recommended for this SWMU/AOC

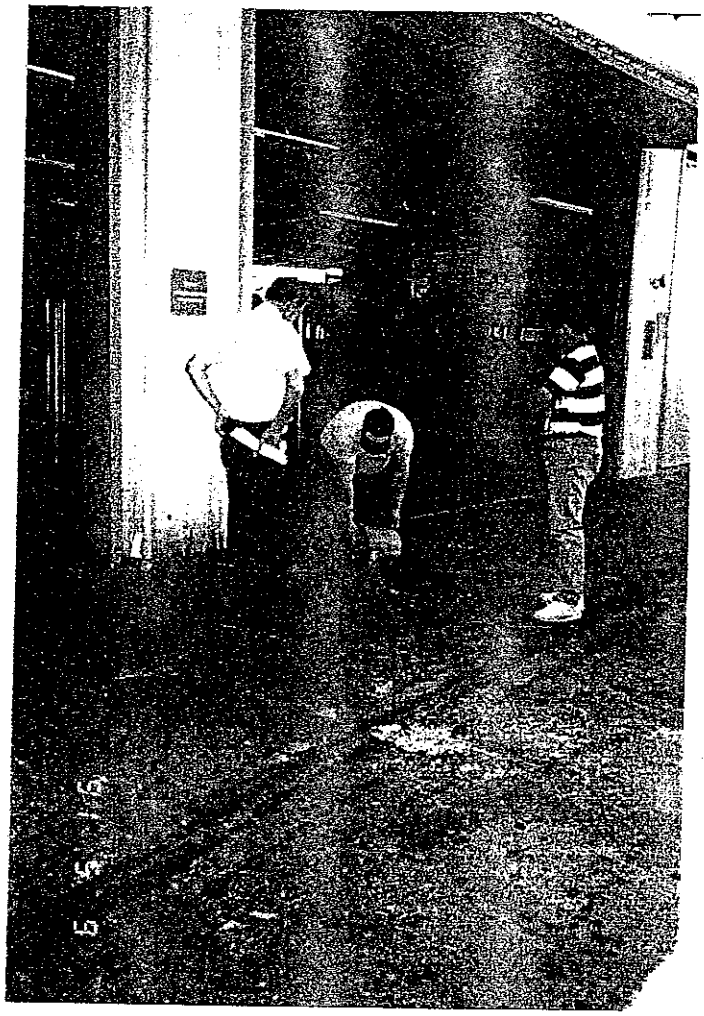
Evaluation Form
SWMU/Area of Concern
Number 168

Name: Underground Storage Area 651-7

Location: South of Building 651

Size: 500 gallons

Date of Site Visit: 09 May 1991



Period of Operation

Installed in 1971
Currently active

Evaluation Form
SWMU/Area of Concern
Number 168

Unit Characteristics

UST 651-7 is located on the southern side of Building 651, situated opposite the location of Tanks 651-5 and 651-6 (SWMU/AOC Numbers 166 and 167, respectively). The 500-gallon steel tank was installed in 1971 and is currently used to store waste oil. The fill box location is identified by a 3-in.-diameter pipe protruding approximately 4 in. from grade. The fill pipe is located in the center of a 6-ft x 6-ft concrete pad. The pad is darkly stained over its entire area. The pad is bordered to the east, west, and south by asphalt pavement; the northern side of the pad abuts a pillar between the third and fourth work bays of the service station at the southern wall of Building 651. The asphalt pavement bordering the pad has dark stains, but has no cracks.

Waste Characteristics

Waste oil

Possible Migration Pathways

Soil

Evidence of Release

Stains on pavement around fill box

Exposure Potential

On-Station personnel

Recommendations

This UST passed a tank test conducted in 1990 under CTO #0006-01 in the Navy CLEAN Program. The stained pavement reflects minor spillage during loading/unloading operations that has not impacted underlying soil. No further action is recommended for this SWMU/AOC.

Final

Marine Corps Air Station El Toro Hazardous Material/Hazardous Waste Management Plan

August 1994

EXTRACTS

Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow

Prepared for:

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Prepared by:

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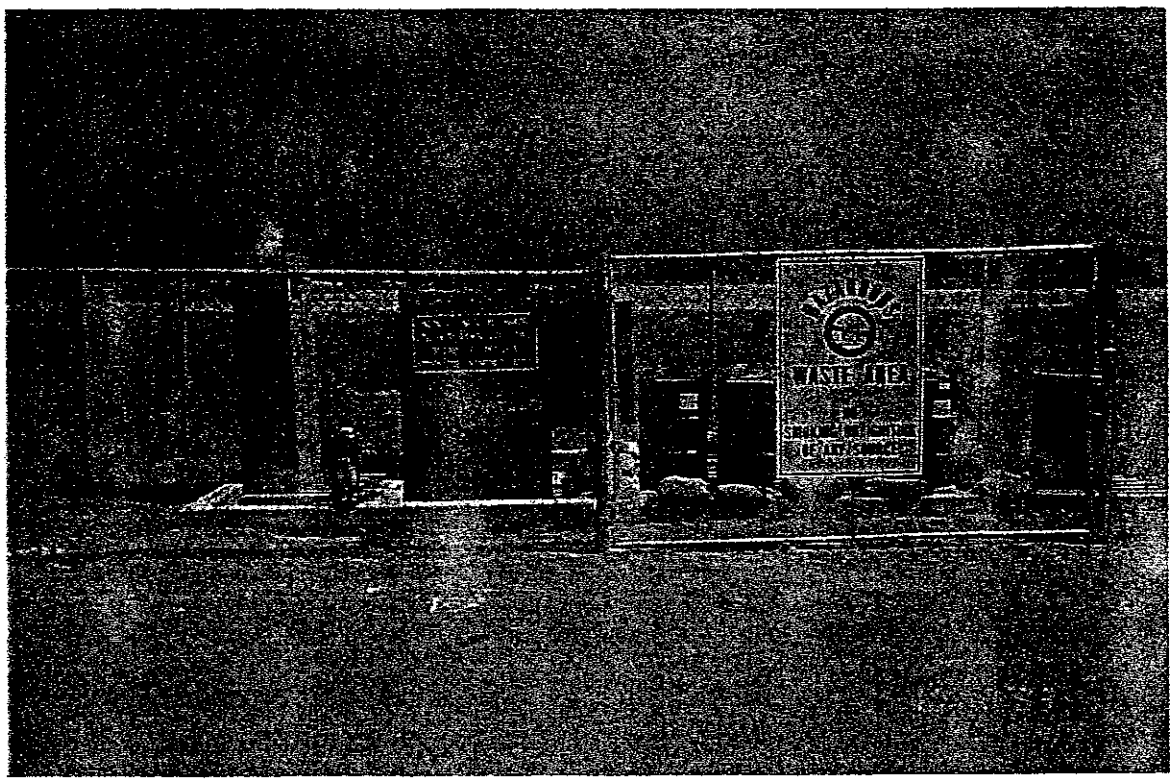
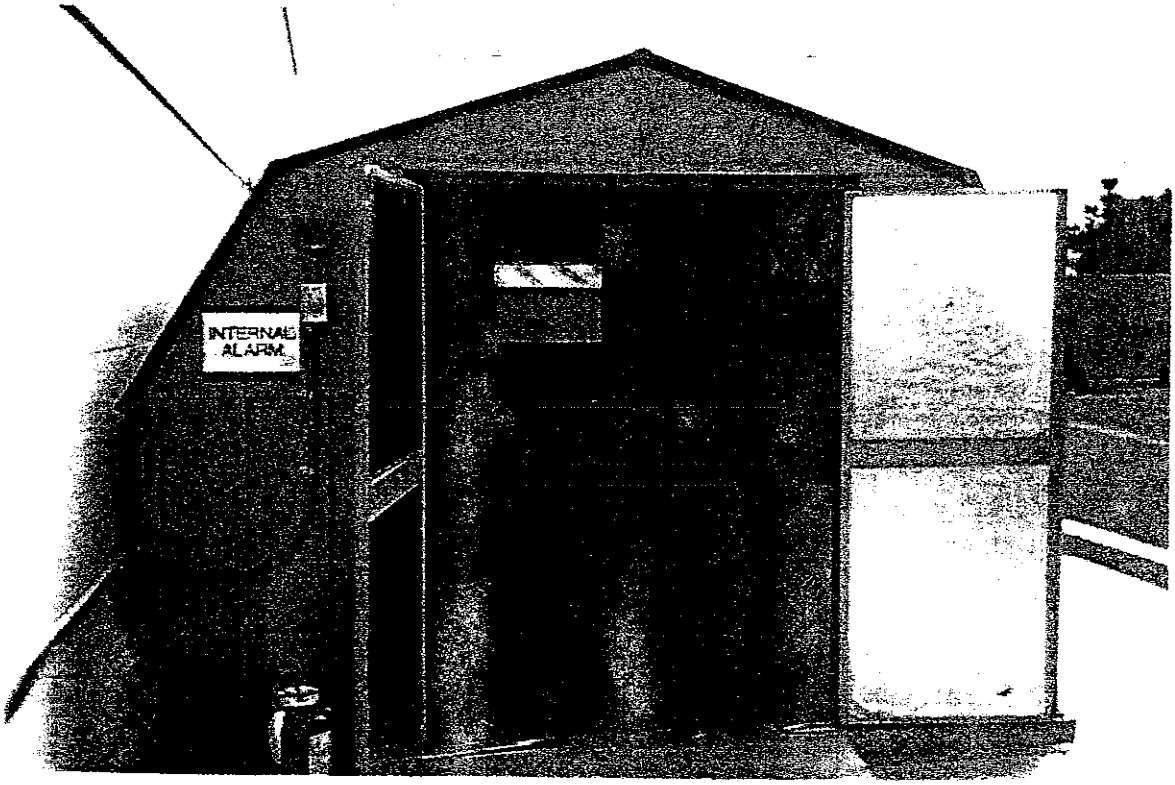
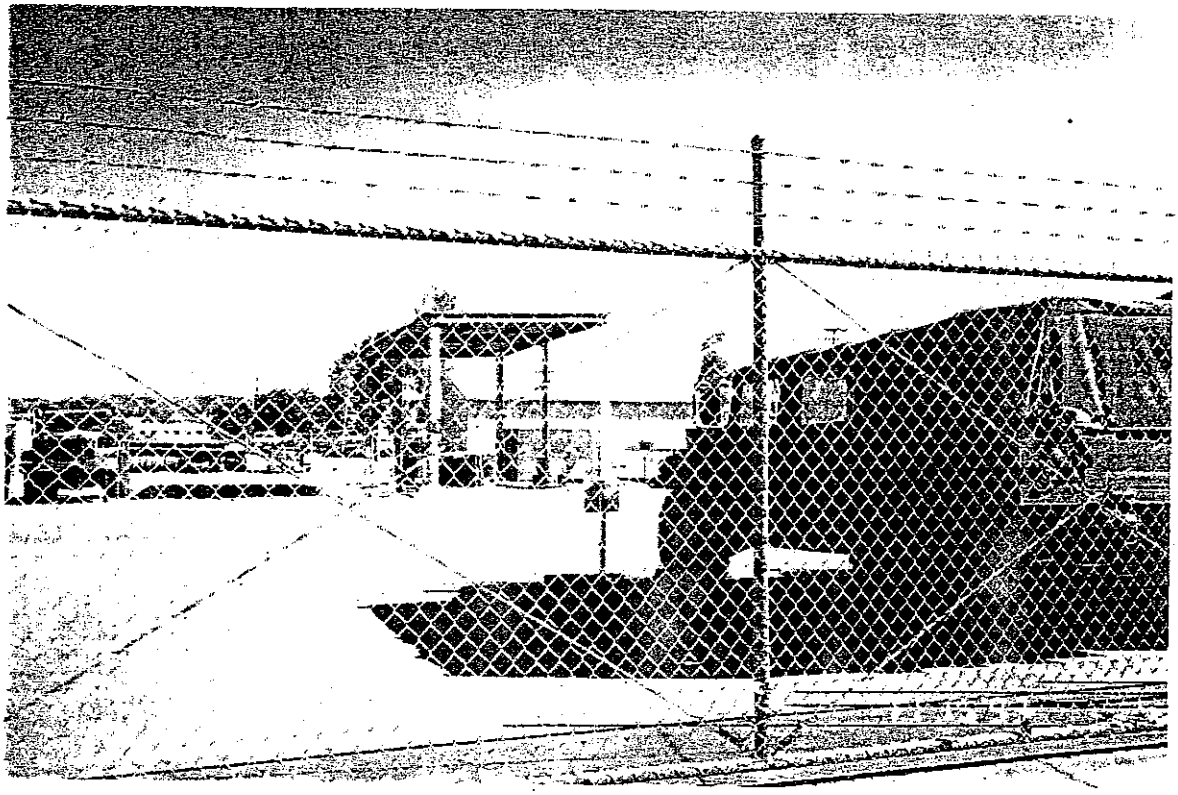
Contract No. N68711-92-D-4658
Delivery Order No. 0004



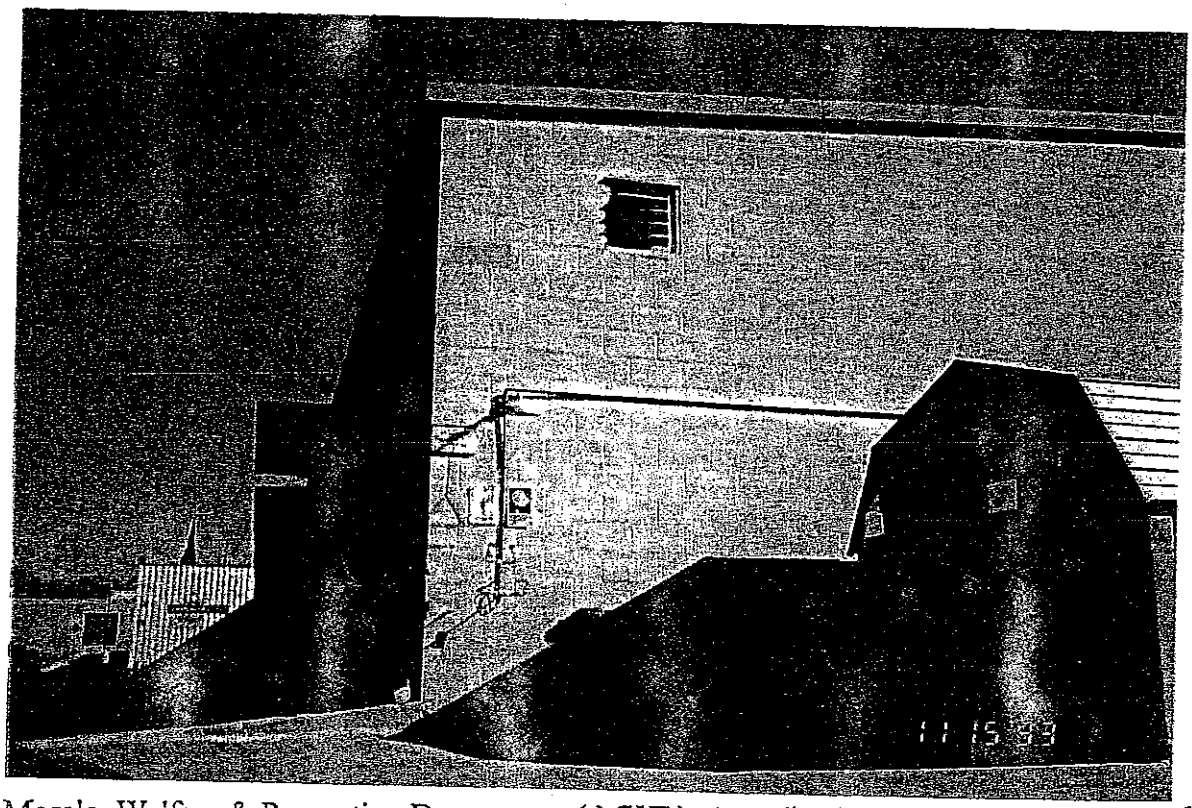
Squadron Operations & Maintenance Squadron (SOMS), Headquarters Bldg 289



Morale, Welfare & Recreation Department (MWR), Auto #1 Bldg 651 ←



Marine Air Control Group 38 (MACG 38), Storage Area Hangar 5



Morale, Welfare & Recreation Department (MWR), Auto #1, Storage Area Bldg 651 ←

▲ HAZARDOUS MATERIALS STORAGE

● HAZARDOUS WASTE ACCUMULATION POINT

■ ONE YEAR PERMITTED HAZARDOUS WASTE STORAGE AREA

MCAS El Toro
Santa Ana, California

HAZARDOUS WASTE ACCUMULATION POINTS AND HAZARDOUS MATERIAL STORAGE LOCATIONS

NOVEMBER 5, 1993

N

500' 250' 0 500' 1000'

1" = 500'

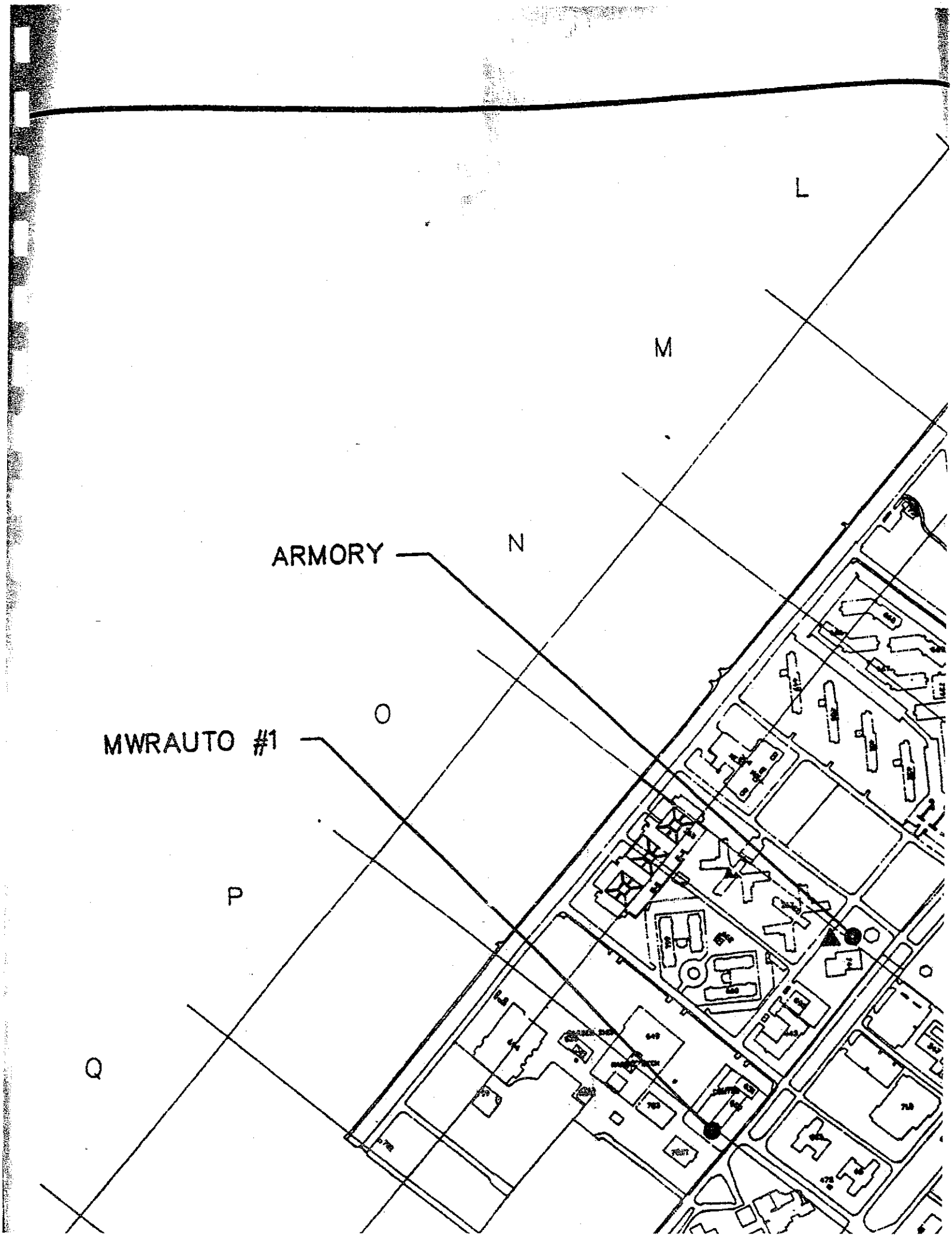
Science Applications International Corporation
An Employee-Owned Company

Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow.

MRW Auto #1 corresponds to TAA 651A which is shown in the photographs in the HM\HWMP

Hazardous Waste Accumulation Point Summary

Unit	Bldg #	Coordinates
Aero Club	10	R5
Armory	744	O2
Auto Hobby Shop	626	M3
CSSD-14	388	U8
Environmental Above Ground Storage Tank	n/a	U6
FMD Shops, Bldg 1601	370	T6
Fuels Division	314	U9
H&HS 38	22	R4
MACG-38 MWCS 38	HGR 5	R4
MAG-46	51	Q4
MAG-46 Fixed Wing	296	T9
MAG-46 Helo Mals-46	295	S8
MALS-11 Air Frames	130	M9
MALS-11 Avionics	856	Q12
MALS-11 Cryogenics (ALSS)	636	R12
MALS-11 GSE North	392	M9
MALS-11 Ordinance	673	P12
MALS-11 Power Plant	658	N10
MALS-11 Power Plant	634	N9
MALS-11 Supply	441	P12
Maytag Aircraft Corp	779	N10
MOD Team	115	N9
Motor Pool (G-4), Bldg 770	386	T7
MWHS-3	7	Q5
MWR Auto #1	651	O2
MWR Golf Course	390	P13
MWSS-Utilities	31	S4
MWSS-373 HQ	800	U10
MWSS-373 Refuelers	671	U9
SOMS HQ	289	N5
SOMS Maintenance	HGR 2	O4
SOMS Recovery		
Supply	320	U7
VMFA (AW)-121	462	R11
VMFA (AW) 225	698	N9
VMFA (AW)-242	461	R11
VMFAT-101	371	Q10
VMFA-323	606	N8
VMGR-352	297	T8
VFMA-314	605	N7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MWRAUTO #1
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STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

FOR

MARINE CORPS AIR STATION EL TORO
EL TORO, CALIFORNIA

CONTRACT NO. N68711-96-D-2059
DELIVERY ORDER NO. 0002

VOLUME 1

EXTRACTS

Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow.

JULY, 1997

INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.

5. STORM WATER POLLUTION PREVENTION EVALUATION

Because of its mission as a part of the National Defense system, MCAS El Toro has numerous facilities and activities where there is potential for pollutants to contact storm water. These facilities include fueling operations, wash racks for aircraft, vehicles, and equipment, engine repair and maintenance, and support facilities that use or store significant quantities of materials containing potential pollutants.

Discharges from MCAS El Toro occur at various locations. Storm water run-off enters Agua Chinon Wash, Bee Canyon Wash, Rifle Range Road Ditch, San Diego Creek, and Upper Newport Bay. A Site Topographic Map shows the locations of discharges leaving the air station. To provide a clearer understanding of the hydrologic conditions at MCAS El Toro, each drainage basin has been modeled using the U.S. Environmental Protection Agency's Storm Water Management Model, as described in the Watershed Characterization Report (Volume 3). The physical characteristics of each drainage basin (e.g., percent impermeability, etc.) are also discussed in that report.

The facilities at MCAS El Toro were investigated from field visits in 1993 to determine whether they were of limited concern or were more likely to be a possible threat to water quality. Addressed in the following sections are those buildings of concern within each Drainage Basin. Each building or activity observed during field observations is listed and discussed by drainage basin.

5.1 DRAINAGE BASIN 1

This drainage basin comprises most of the buildings in Areas 27 and 28. It has a map area of about 188 acres.

5.1.1 Buildings of Limited Concern

The buildings listed below in Table 5-1 do not use, handle, transport or store significant quantities of industrial materials nor do they generate significant amounts of liquid or solid industrial pollutants, and they do not appear to be of concern to the quality of storm water discharges:

Recommended BMPs include prohibiting drum storage except in designated hazardous waste storage areas with secondary containment and cover from rain.

Building 99 - Flight Line Storage - SOMS

No industrial activities are performed in the area. There are two flammable/ hazardous storage lockers located outside near Building 99. Potential pollutants included lubricating oil and solvent.

Recommended BMPs include either removing the storage lockers or installing a spill kit in the area and developing and implementing a SPCCP.

Building 289 - Maintenance Hangar Space/ACFT Operations (VAL) - SOMS

No industrial activities appear to be performed in the area. There is an oil/water separator (#896) present. The oil/water separator discharges directly to the sanitary sewer. A hazardous waste storage area is located outside near Building 289. This area is covered, has a concrete berm, a canopy, and contains drummed JP-5 fuel sample waste. A spill kit and a SPCCP are present at the storage site.

Recommended BMPs include performing routine inspection and maintenance of the oil/water separator in accordance with the manufacturer's specifications. No additional BMPs are recommended at this time, however, if additional industrial activities resume in this hangar, appropriate BMPs should be developed and implemented.

Building 651 - Exchange Auto Repair Station/Exchange Supplemental Gas Station - MWR-Ret This facility encompasses general personal vehicle maintenance and a gasoline filling station. Potential pollutants included gasoline motor fuel, oil, solvents and flammable liquid. There are 3 floor drains inside the building which drain to an oil/water separator (#651/652) which discharges to the sanitary sewer. Floors are cleaned with soap and water. A covered exterior hazardous waste storage shed is located at the site, however, it does not provide secondary containment. A spill cleanup kit and a SPCCP are present and personnel have been trained in spill cleanup and countermeasure activities.

TABLE 5-17

BASIN 17

SUMMARY OF BMPs

BLDG #	BASIN	BUILDING DESCRIPTION	TENANT	Concern Level	BMP STATUS	BMP #	BMP Description
472	17	Wading Pool	Training	Limited			No Additional BMPs are Recommended
475	17	Storage Building/Disbursing	Compt	Limited			No Additional BMPs are Recommended
523	17	Storage	Ground Safety	Limited			No Additional BMPs are Recommended
600	17	Storage out of Stores	MWCS-38	Limited			No Additional BMPs are Recommended
624	17	Air Terminal Administration	Station/G-3 Station/G-3	Limited			No Additional BMPs are Recommended
629	17	Academic Instruction Building	FASOTRAGR U	Limited			No Additional BMPs are Recommended
649	17	Exchange Retail Store Cafeteria Exchange Warehouse	MWR-Ret MWR-Ret MWR-Ret	Limited			No Additional BMPs are Recommended
650	17	Exchange Retail Store Warehouse	MWR-Ret	Limited			No Additional BMPs are Recommended
651	17	Exchange Auto Repair Station	MWR-Ret	Concern	Rec	012	Construct Berm or Dike Around Critical Areas
					Rec	110	Regularly Inspect and Maintain Storm Water Conveyance Systems
					Rec	004	Avoid Hosing Down the Site
					Rec	066	Eliminate Topping Off Tanks

TABLE 7-1

MCAS EL TORO MATERIALS INVENTORY

BLDG #	BASIN	BUILDING DESCRIPTION	TENANT	Concern Level	TRADE/COMMON NAME	MAX. DAY	AVE. Day	CONT.
637 - 1	08	Tank - Exchange Gas Station	MWR	Concern	Gasoline - Unleaded Premium	8000 gal	5000 gal	12000 gal
637	08	Tank - Exchange Gas Station	MWR-Ret	Concern	Liquefied Petroleum Gas	499 gal	300 gal	500 gal
643	07	Fixed ACFT Start System	Installation	Concern	Compressor Oil	N/A	N/A	N/A
646	06	Arresting Gear E-28	Sta/G-3	Concern	Lubricating Oil	N/A	N/A	N/A
651 - 4	17	UST-Exchange Auto Repair	MWR-Ret	Concern	Gasoline - Unleaded Regular	8000 gal	5000 gal	12000 gal
647	06	Arresting Gear E-28	Sta/G-3	Concern	Lubricating Oil	N/A	N/A	N/A
651 - 3	17	UST-Exchange Auto Repair	MWR-Ret	Concern	Gasoline - Unleaded Premium	8000 gal	5000gal	12000 gal
651 - 2	17	UST-Exchange Auto Repair	MWR-Ret	Concern	Gasoline - Mid Grade	8000 gal	5000 gal	12000 gal
651 - 1	17	UST-Exchange Auto Repair	MWR-Ret	Concern	Gasoline - Unleaded Regular	8000 gal	5000 gal	12000 gal
651	17	Exchange Auto Repair Station	MWR-Ret	Concern	Liquid Petroleum Gas	800 gal	600 gal	1150 gal
655	01	Field Maint Shop	CSSD-14 HM Storage	Concern	Antifreeze	55 gal	25 gal	55 gal
655	01	Field Maint Shop	CSSD-14 HM Storage	Concern	Brake Fluid, automotive	66 gal	5 gal	1 gal

TABLE 5-39

MCAS EL TORO

SPILL HISTORY

Date	Incident No.	Description
November 28, 1995	N/A	Approximately 2 quarts of hydraulic fluid were lost on the roadway and shoulder when a forklift's hydraulic line was inadvertently punctured. A drip pan was placed under the leaking line to contain the leak and contaminated soil was removed and drummed as hazardous waste.
September 18, 1995	N/A	A one gallon container of liquid scale dissolver spilled when it was dropped by warehouse personnel. The spill was diked and absorbed with ash. Spill contained to the warehouse floor.
September 12, 1995	N/A	Three quarts of hydraulic fluid spilled onto the concrete warehouse floor when a forklift's fork punctured the stored material during issuance. Spilled cleaned up with speedy dry absorbent. Spill contained to the warehouse floor.
July 21, 1995	N/A	Approximately 80 gallons of JP-5 fuel spilled when a fuel truck attempted to fuel an aircraft with an open fuel cell. Spill cleaned up with speedy dry absorbent. Spill contained to the flightline.
July 20, 1995	N/A	Approximately 10 gallons of JP-5 fuel spilled when an aircraft vented it's tanks. Spill cleaned up with speedy dry absorbent. Spill contained to the flightline.
June 29, 1995	N/A	Approximately 70 gallons of JP-5 fuel spilled from an aircraft fuel tank with a dysfunctional valve. Spill cleaned up with speedy dry absorbent. Spill contained to the flightline.
November 1, 1994	N/A	Approximately 400 gallons of JP-5 fuel leaked from an F/A-18 aircraft. Three hundred gallons were recovered and 100 gallons were cleaned up with speedy dry absorbent. Spill contained to the flightline.
November 1, 1994	N/A	Approximately 250 gallons of JP-5 fuel leaked from an F/A-18 aircraft. Spill cleaned up with speedy dry absorbent. Spill contained to the flightline.

TABLE 5-39
MCAS EL TORO
SPILL HISTORY

Date	Incident No.	Description
September 1, 1994	N/A	Approximately 1 gallon of hydrochloric acid and another gallon of chlorine spilled when their lines ruptured. Pumping through the line was stopped immediately and the spill was cleaned up with sodium bicarbonate. Spill contained to the flightline.
August 12, 1994	N/A	A small amount of paint stripper (methylene chloride) from a 5 gallon can spilled when the can overheated and blew its cap. The small amount evaporated before cleanup could occur.
July 14, 1994	249777	Approximately 25 gallons of transformer oil, possibly containing more than 55 ppm PCBs, spilled when the personnel handling the transformer overturned it. The initial responders laid down absorbent socks, mats pads and Lite-Dri absorbent around the spill and on the liquid. Workers then removed and drummed soil from the spill area as hazardous waste. Cleanup began immediately on 14 July 94 and was completed 15 July 94. Additional hazardous waste included the absorbent materials, personal protective gear rags and mops used to cleanup the spill.
April 26, 1994	N/A	Approximately 100 gallons of JP-5 fuel spilled when an aircraft vented its tanks. Spill cleaned up with speedy dry absorbent. Spill contained to the flightline.
March 8, 1994	N/A	Approximately 20 gallons of JP-5 fuel spilled when an aircraft was refueling. Spill cleaned up with speedy dry absorbent. Spill contained to the flightline.
May 11, 1993	318	Caustic soap leaked from a container behind Bldg 317.
March 1, 1993	146	Approximately one quart of methyl ethyl ketone spilled to the ground at Bldg. 306.
September 9, 1992	873	Unknown quantity of fumigant released into the soil at Strawberry Field.
August 16, 1992	788	Fire occurred at Bldg. 751 with a van containing Hg, Li, Cd, and Pb-acid batteries. This caused a chemical release into the atmosphere.

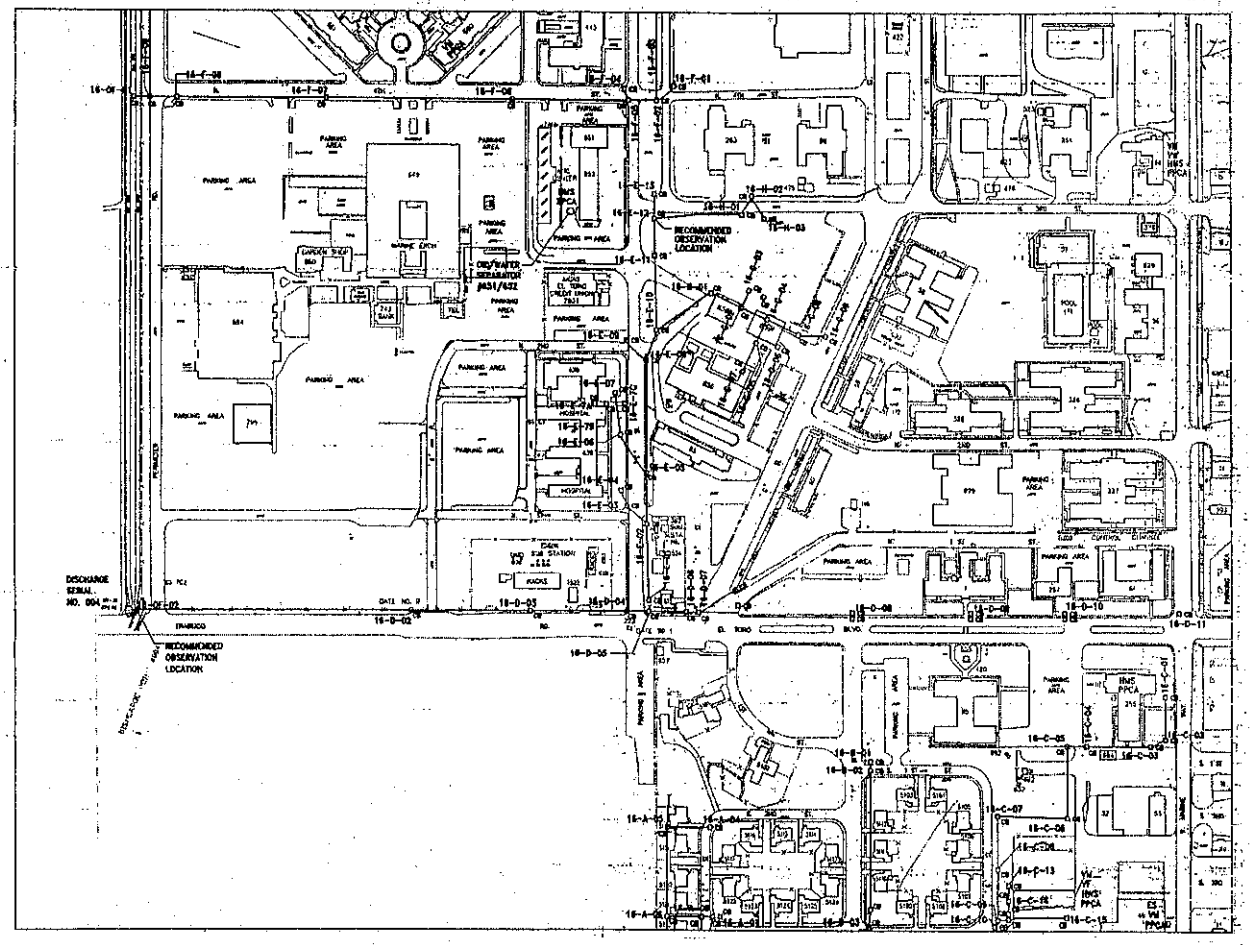
TABLE 5-39

MCAS EL TORO

SPILL HISTORY

Date	Incident No.	Description
June 1, 1992	560	Approximately 3,950 gallons of JP-5 spilled from a refueler. Fuel was contained and did not enter storm drains
May 28, 1992	552	JP-5 smell coming from storm drain at Bldg 368 Flow from drain diverted to oil/water separators
March 5, 1992	228	Three quarts of Hg spilled at Bldg. 297. The spill was contained.
March 5, 1992	223	Tractor trailer spilled 15-20 gallons of diesel fuel into sanitary sewer Sewer system was diked and covered.
February 5, 1992	121	One gallon of transformer oil containing PCBs spilled at Bldg. 439. The spill was contained.
January 17, 1992	053	Approximately 100 gallons of antifreeze spilled into ditch and then to Agua Chinon.
December 18, 1991	1092	Lithium battery exploded at Bldg 17. The debris was contained with some off-gassing.
November 19, 1991	997	Approximately 10 Lithium Batteries leaking and off-gassing at Bldg 673T3.
September 16, 1991	754	Contaminated oil spilled into sewer at Bldg 295.
July 12, 1991	580	Paint stripper spilled into ditch near Bldg 800. The spill was diverted to oil/water separator.
May 23, 1991	453	Unknown white substance found at Officer's Club crystal room.

A reference to a major spill is contained in the May 1990 SPCCP written for the MCAS. The SPCC states that "one major unauthorized release has occurred in the last two years. In August 1988, a 108,000 gallon JP-5 storage tank pipe was reported to have leaked causing soil and ground water contamination. The leak was reportedly repaired in early 1990."

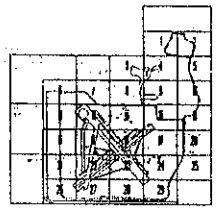


"MCAS" EL TORO - AREA 16
SCALE: 1"=150'-0"

SYMBOL	DESCRIPTION	PREP'D BY	DATE	APPROVED

LEGENDS

AST - ABOVE GROUND STORAGE TANK
AM - AIRCRAFT MAINTENANCE
AW - AIRCRAFT WASHING
AF - AIRCRAFT FUELING
AP - AIRCRAFT PAINTING
CB - CATCH BASIN
ES - EQUIPMENT STORAGE
EM - EQUIPMENT MAINTENANCE
HMS - HAZARDOUS MATERIAL STORAGE
HWS - HAZARDOUS WASTE STORAGE
HWTA - HAZARDOUS WASTE TRANSFER AREA
MH - MANHOLE
OWS - OIL/WATER SEPARATOR
PCA - POLLUTANT CONTACT AREA
PPCA - POTENTIAL POLLUTANT CONTACT AREA
UGT - UNDERGROUND STORAGE TANK
VP - VEHICLE PAINTING
VF - VEHICLE FUELING
VM - VEHICLE MAINTENANCE
VW - VEHICLE WASHING
WR - WASH RACK
WTA - WASTE TRANSFER AREA



KEY PLAN
SCALE: NONE

1"=150'-0" 150 0 150 300 SCALE FEET

IF SHEET IS LESS THAN 22X34 IT IS A REDUCED PRINT SCALE ACCORDINGLY

IEM
INTEGRATED ENVIRONMENTAL MANAGEMENT, INC.

DEPARTMENT OF THE NAVY NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST DIVISION
EL TORO CALIFORNIA
MARINE CORPS AIR STATION EL TORO, CA.

"MCAS" EL TORO

AREA 16 - STORM DRAINS

SIZE D

8TWTRAREA16.PDF

SOUTHWESTNAVFACENGCOM
CODE 06CC LMH
SAN DIEGO, CA 92101

Extracts from Property Records and 1997 Building Guide

5155	71133	PUBLIC QUARTERS/SR OFF	NBY45605	19680801	SF	2,136	79	46	13	$27,724	$82,593	1964	1986
5159	71133	PUBLIC QUARTERS/SR OFF	NBY45605	19680801	SF	2,136	79	46	13	$27,724	$82,593	1964	1986
	84210		NOY13828	19680801		0	0	0	0	$29,149	$251,031	1947	
	84210		NBY45605	19680801		0	0	0	0	$82,438	$400,236	1964	
	81230		NOY23438	19680801		0	0	0	0	$70,404	$477,269	1951	
	82410	L P GAS DISTRIBUTION SYS		19680801		0	0	0	0	$50,421	$320,014	1954	1979
	83210	SANITARY SEWER		19680801		0	0	0	0	$34,814	$299,818	1947	
	85110	ROADS/BIT/	NOY13828	19680801	SY	29,670	0	0	0	$41,973	$361,723	1947	
	85110	BITUMINOUS ROADS	NBY45605	19680801	SY	27,616	0	0	0	$165,075	$802,925	1964	
	85210	PARKING AREA/BITUMINOUS/	NBY45605	19680801	SY	7,039	0	0	0	$42,417	$206,316	1964	
	85220	SIDEWALKS/CONCRETE/	NBY45605	19680801	SY	1,164	0	0	0	$6,172	$29,965	1964	
	85220	SIDEWALKS/CONCRETE	NBY45605	19680801	SY	4,092	0	0	0	$20,026	$97,226	1964	
	87110	STORM SEWER	NBY45605	19680801	SY	0	0	0	0	$56,641	$274,992	1964	
	88010	FIRE ALARM SYS	NBY45605	19680801		0	0	0	0	$2,314	$11,255	1964	
299	21420	AUTO VEH MAINT NONCOMB		19680901	SF	4,268	97	44	18	$33,823	$433,746	1944	
635	89056	ACFT WEIGHING CALIB. FRAME		19690101	SY	0	22	20	0	$1,010	$4,269	1968	
	83210	SANITARY SEWER	NBY45605	19690101		0	0	0	0	$220,930	$1,072,615	1964	
	87210	FENCING	NBY45605	19690101	SY	0	1250	0	6	$3,141	$15,278	1964	
6168	83230	SEWAGE PUMP STATION N0. 1	NBY45605	19690101		0	15	13	16	$156,716	$314,425	1964	1984
6169	83230	SEWAGE PUMP STATION NO. 2	NBY45605	19690101		0	15	13	16	$168,718	$330,619	1964	1984
1809	73025	GUARD SHACK	NA	19690501	SF	50	10	5	7	$1,686	$5,674	1969	1981
637	74031	SUPPLEMENTAL GAS STATION	MX2368	19690601	SF	900	30	30	13	$73,659	$206,881	1969	1981
638	13462	CROUSE HINDS WIND TEE		19691101	SY	0	0	0	0	$3,849	$15,204	1969	
644	14930	E28 ARREST GEAR R/W 16L		19700401	SY	0	0	0	0	$108,415	$171,625	1969	1990
645	14930	E28 ARREST GEAR R/W 16R		19700401	SY	0	0	0	0	$8,653	$33,455	1969	1990
646	14930	E28 ARREST GEAR R/W 25L		19700401	SY	0	0	0	0	$8,991	$33,854	1969	1990
647	14930	E28 ARREST GEAR R/W 25R		19700401	SY	0	0	0	0	$8,991	$33,856	1969	1990
	45170	DISPOSAL YARD 1		19700401	SY	17,867	0	0	0	$18,209	$249,846	1943	
	45110	PCC/OPEN STGE/RI NR B. 673	NOY10151	19700401	SY	5,332	0	0	0	$29,483	$156,100	1943	1981
	45170	DISPOSAL YARD 3	NOY10151	19700401	SY	12,856	0	0	0	$25,924	$355,703	1943	
657	73025	VISITOR/VEHICLE REGISTRATION	N62473702130	19700901	SF	315	21	15	8	$10,110	$37,488	1970	
1810	14347	MAGAZINE AREA SECURITY		19710101	SF	360	30	12	8	$2,260	$8,717	1969	
665	73011	FIRE HOSE DRYING STRCTR		19720101	SY	0	11	11	52	$700	$2,211	1972	
655	21453	FIELD MAINTENANCE SHOP	N6247369C0266	19711201	SF	18,600	274	60	23	$410,603	$1,502,309	1970	1990
→ 651	74030	AUTO SAFETY SERVICE CTR	N6247471C4098	19711201	SF	13,839	239	96	17	$189,600	$584,645	1971	1984
664	81310	SUBSTATION BLDG.	N6247471C4579	19720101	SF	625	25	25	10	$115,692	$255,634	1972	1984
656	74074	CHILD CARE CENTER	N6247470C0888	19711101	SF	12,733	179	94	11	$290,169	$979,443	1971	1990
649	74001	EXCHANGE RETAIL STORE	N6247468C0171	19701101	SF	109,364	248	248	31	$2,727,241	$10,243,426	1970	1985
650	74001	GARDEN SHOP	N6247368C0171	19701101	SF	3,800	112	60	12	$56,660	$210,095	1970	
	81320	SUBSTATION	N6247368C0171	19701101		0	0	0	0	$34,574	$128,339	1970	
678	71477	HOUSING/MAINT STORAGE		19730201	SF	1,750	50	35	10	$9,125	$25,231	1973	
679	74079	RIDING STABLE-QUARANTINE ARE		19730701	SF	1,100	100	22	30	$2,684	$7,421	1973	
680	74078	RECREATION PAVILION		19730701	SF	400	20	20	8	$339	$937	1973	
	84215	PUMPING STATIONS, ETC.-POTAB	NOY9453	19441201		0	0	0	0	$16,799	$215,430	1944	
	89025	CARBON DIOXIDE PLANT	NOY9452	19451201		0	0	0	0	$1,906	$22,946	1945	
	85235	REFUELER PARKING LOTS	N6247472C8343	19720801	SY	3,026	0	0	0	$44,192	$139,558	1972	
	14930	E28 ARREST GEAR R/W 34R		19740301	SY	0	30	10	3	$2,194	$5,783	1974	
6881	75057	PLAYGROUND	N6247472C0099	19730301	SY	0	491	285	0	$88,041	$174,492	1973	1986
685	81209	ELECTRIC DISTRIBUTION BLDG		19740301	SF	200	20	10	8	$359	$946	1974	
	83210	MARINE CORPS RECREATIONAL FA	N6247474C6801	19740701		0	0	0	0	$35,900	$97,971	1973	
BB309	74089	BATHHOUSE		19740701	SF	360	20	18	12	$3,500	$11,855	1971	
BB310	74081	LODGE HOUSE		19740701	SF	1,200	50	24	12	$12,569	$42,571	1971	
BB311	74081	CABIN-BIG BEAR		19740701	SF	504	24	21	16	$7,500	$25,403	1971	

El Toro Building Guide

BLDG	GRI	DESCRIPTION	TENANT	CATCO	CAC	SIZE
606	N8	Maint Hangar OH Space	HMM-163	21105	EBVO	5350 SF
607	R13	Public Toilet/Golf Course	MWR/Rec	73075	EBLO	92 SF
610	M9	Water Distribution Bldg	Installation	84209	EHCO	1126 SF
611	O12	Missile Magazine	Sta Ordn	42172	EBQO	930 SF
614	L10	Aqua Chinon Playground	Housing	75020	ECNO	2 EA
615	M2	Handball Courts	MWR/Rec	74084	EBLO	1743 SF
616	U7	Admin Office	Sta/G-4	61010	EBFO	792 SF
619	T12	Standby Generator Bldg	Installation	81159	EAAO	1329 SF
624	O4	Air Terminal	SOMS	14111	EBNO	2077 SF
624	O4	SQ Headquarters	SOMS	61010	EBFO	9393 SF
625	M3	Hobby Shop, Automotive	MWR/Rec	74038	EBLO	6153 SF
626	M3	Hobby Shop, Automotive	MWR/Rec	74038	EBLO	480 SF
629	P4	Academic Instruction Bldg	FASOTRAG	17110	EBAO	4260 SF
631	U9	Applied Instruction Bldg	MALS-11	17120	EBAO	12870
633	U9	Loading/Unloading Ramp	DRMO	85115	EDAO	68 SY
634	M9	Avionics Shop	MALS-11	21154	EBVO	675 SF
634	M9	Maintenance Hangar 01 Space	MALS-11	21106	EBVO	2611 SF
634	M9	Engine Maintenance Shop	MALS-11	21121	EBVO	23365
634	M9	(Maint Hangar OH Space)	Vacant	21105	EBVO	13163
634	M9	(Maint Hangar O2 Space)	Vacant	21107	EBVO	5119 SF
634	M9	(Maint Hangar 01 Space)	Vacant	21106	EBVO	9958 SF
635	T9	Weighing Facility	Supply	89056	EAPO	1 EA
636	R12	Cryogenics Office	MALS-11	14187	EBNO	500 SF
636	R12	Parachute/Surv Equip Shop	MALS-11	21175	EBVO	8530 SF
637	M8	Exchange Gas Station	MWR/Ret	74031	EBLO	900 SF
638	Q10	Wind Direction Indicator	Sta/G-3	13462	ECXO	1 EA
639	N8	Electric Power Plant Bldg	Installation	81109	EAAO	144 SF
640	N8	Electric Power Plant Bldg	Installation	81109	EAAO	144 SF
641	N8	Electric Power Plant Bldg	Installation	81109	EAAO	144 SF
642	N9	Electric Power Plant Bldg	Installation	81109	ECEO	144 SF
643	N8	Fixed ACFT Start System	Installation	14915	ECEO	32 EA
644	N6	Arresting Gear	SOMS	14930	ECEO	1 EA
645	N6	Arresting Gear	SOMS	14930	ECEO	1 EA
646	P10	Arresting Gear	SOMS	14930	ECEO	1 EA
647	P10	Arresting Gear	SOMS	14930	ECEO	1 EA
649	O2	Cafeteria	MWR/Ret	74004	EBLO	6855 SF
649	O2	Exchange Retail Store	MWR/Ret	74001	EBLO	64191
649	O2	Exchange Warehouse	MWR/Ret	74085	EBLO	38318
650	P2	Exchange Retail Store Whse	MWR/Ret	74001	EBLO	3800 SF
→ 651	O2	Exchange Auto Repair Sta	MWR/Ret	74030	EBLO	10495
651	O2	Exchange Supplmtl Gas Sta	MWR/Ret	74030	EBLO	3344 SF
655	U8	Field Maint Shop	CSSD-14	21453	EBBO	18600
656	P3	Child Development Center	Sta/G-1	74074	EBLO	12733
657	Q3	Visitor/Vehicle Registration	PMO	73025	EBLO	315 SF
658	N10	Engine Test Cell	MALS-11	21181	EBVO	2894 SF
659	N10	Storage Tank/Nonpotable	Installation	84440	EAQO	25000

7 stacks modules
5 with original structure
2 added on with storage area

11000
1JP/MY

23 MAY 1991

MEMORANDUM

From: Planning Director
To: Director, Operations Division

Subj: BUILDING DEMOLITION

Encl: (1) Site Map
(2) Demolition Checklist

1. The following storage area was given a building number in error as this was constructed as a part of Bldg No. 651. The data has since been consolidated into Building No. 651.

NUMBER	DESCRIPTION	MAP GRID
652	Marine Corps Exchange Storage	0-2

2. Enclosure (1) shows the location of Bldg. No. 651 and enclosure (2) is for your use.

3. If there are any questions, please call Mary Ellen Yovin in the Planning Office on extension 3705.

EDWARD J. RUMSEY

Copy to: (w/o encl (2))
1CH
1CA
1EA
1LA
1NA

Blind copy to:
1JB
1JD
1JF
1JE.50
1JJ.10
1JP
1JP.40
FM FILE
FM LOG

BLDG CLASS 2 PROPERTY RECORD

(004) UIC..M60050
MCAS EL TORO SANTA ANA CA

(001) PR NO.....2-02054
(005) FACILITY NO..651
(106) SPEC AREA....

LOCATION

(101) COUNTRY..US UNITED STATES
(102) STATE....06 CALIFORNIA
(103) COUNTY...059 ORANGE
(104) CITY.....0000
(107) MAP GRID.02

GENERAL INFORMATION

(007) ACTION.....CAP-IMPROV
(008) FAM HOUSING....NO
+(009) EE DATE.....16 JUL 90
(011) PR REVIEW DATE.~~01 JUN 84~~ 27 JUN 9
(010) FACILITY NAME..
AUTO SAFETY SERVICE CTR

ACQUISITION

(201) ESTATE.....11 MCON
(202) ACQ CONTRACT...N62474 71C4098
(203) ACQ DATE.....01 DEC 71
(204) GOVT COST..... $189,600
(207) LAND CCN.....91140

MEASUREMENTS

(301) LENGTH.... 239 FT
(302) WIDTH..... 96 FT
(303) HEIGHT.... 17 FT
(304)/(308) AREA/UM... ~~12,182~~ SF 13899
(305) STORIES... 01 11,882
(307) IRREGULAR. YES

CONSTRUCTION

(401) YEAR BUILT.....1971
(402) CONSTRUCTION TYPE..PERMANENT
(403) YEAR IMPROVED.....1984

(404) ABMP CODE.....
(409) PROJECT ID.....
(410) HISTORIC IND...

MAINTENANCE

(701) MAINT UIC..M60050 (702) PRIME USE....74030 (703) MFC...4 USMC

+STATUS/UTILIZATION

(502) CATEGORY CODE...74030 (501) USE..EXCHGE AUTO REPAIR STA

(510) USER UIC.....M60050.....MCAS EL TORO SANTA ANA CA

	AREA/SF*	OTHER/	ALT/OL	DEF CODES
ADEQ	(515) ....~~11,882.00~~ 10,495	(516)	(517) 28.00	(524)
SBST	(518)	(519)	(520)	(525)
INAD	(521)	(522)	(523)	(526)
TOTAL	11,882.00		28.00	

SF changes input after site visit per Xenia S. 6/7/91

95.667 x 53 = 5,070
121 x 44.833 = 5,425
10,495 S.F.

addition
24 x 48.10 (48.8333) = 3344 S.F.

90SEP01 EFD.N62474 MC.M00027 *ACTIVITY.M60050 PR.2-02054 CONT

BLDG

CLASS 2 PROPERTY RECORD
(C-O-N-T-I-N-U-A-T-I-O-N)

(004) UIC..M60050
MCAS EL TORO SANTA ANA CA

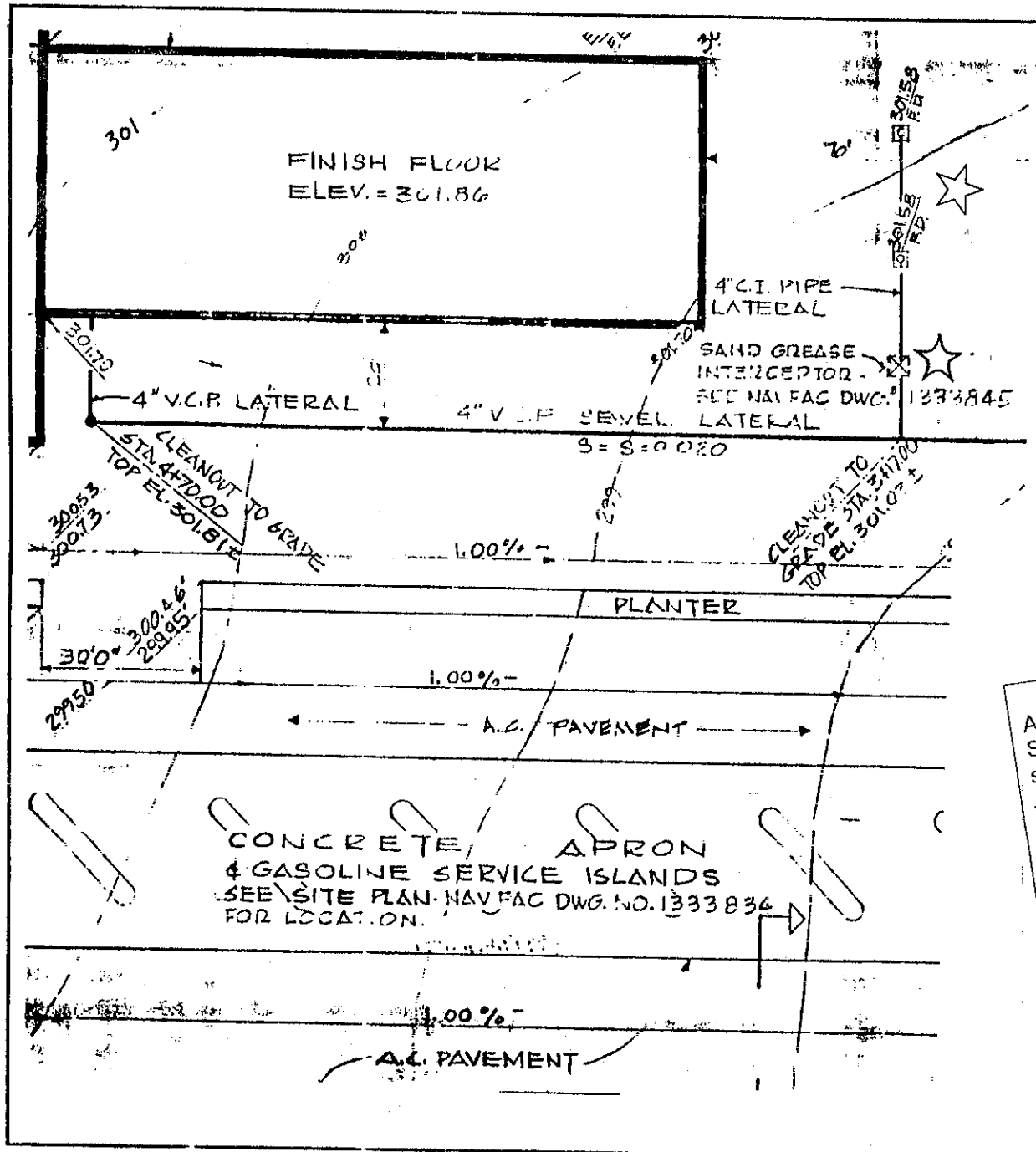
(001) PR NO.....2-02054
(005) FACILITY NO..651
(106) SPEC AREA....

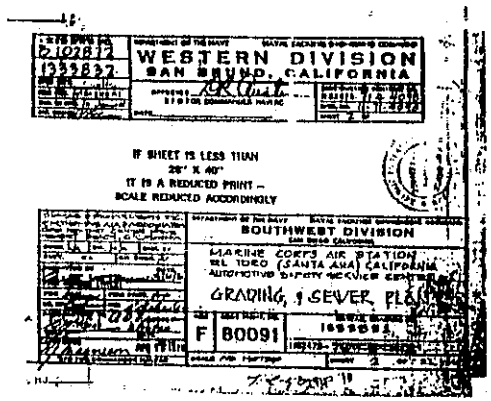
(502) CATEGORY CODE...74031 (501) USE..EXCHGE SUPPLMTL GAS STA

(510) USER UIC.....M60050.....MCAS EL TORO SANTA ANA CA

	AREA/SF*	OTHER/	ALT/OL	DEF CODES
ADEQ (515)	~~300.00~~ 3344 (516)	(517)		(524)
SBST (518)	(519)	(520)		(525)
INAD (521)	(522)	(523)		(526)
TOTAL	300.00			

90SEP01 EFD.N62474 MC.M00027 *ACTIVITY.M60050 PR.2-02054

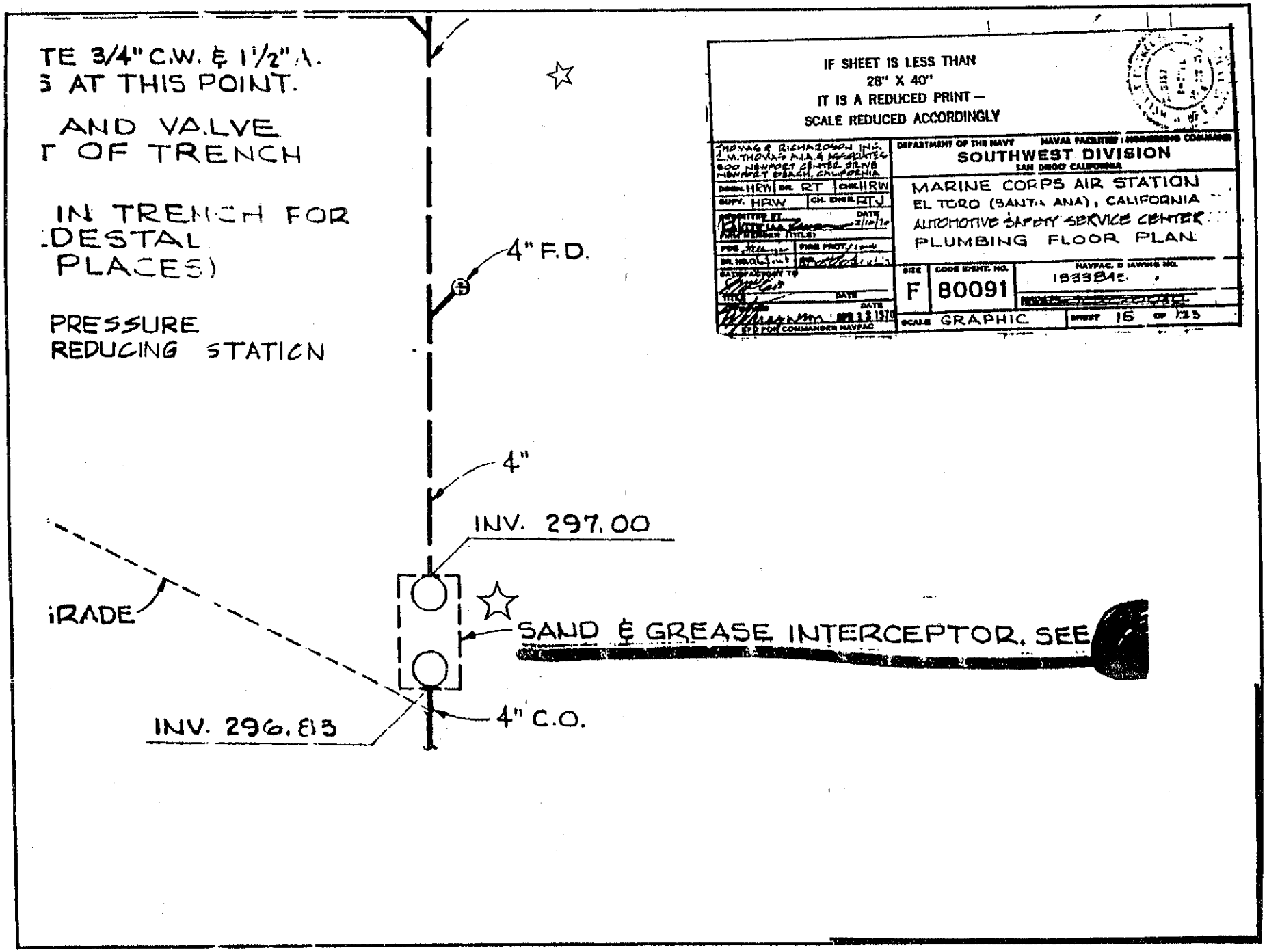




Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow.

☆ The star symbol identifies the oil/water separator (OWS 651-8) and the loading dock/washrack area with floor drain.

The drawing is dated 1970 and at that time the loading dock/washrack had not yet been added.


TE 3/4" C.W. & 1 1/2" A.
S AT THIS POINT.
AND VALVE
T OF TRENCH
IN TRENCH FOR
DESTAL
PLACES)
PRESSURE
REDUCING STATION
4" F.D.
4"
INV. 297.00
RADE
SAND & GREASE INTERCEPTOR. SEE
INV. 296.83
4" C.O.
IF SHEET IS LESS THAN
28" X 40"
IT IS A REDUCED PRINT –
SCALE REDUCED ACCORDINGLY
DEPARTMENT OF THE NAVY
NAVAL FACILITIES ENGINEERING COMMAND
SOUTHWEST DIVISION
SAN DIEGO CALIFORNIA
MARINE CORPS AIR STATION
EL TORO (SANTA ANA), CALIFORNIA
AUTOMOTIVE SAFETY SERVICE CENTER
PLUMBING FLOOR PLAN
F
80091
1833845
GRAPHIC
15

MARINE CORPS AIR STATION EL TORO
EL TORO, CALIFORNIA
INSTALLATION RESTORATION PROGRAM
FINAL ENVIRONMENTAL BASELINE SURVEY REPORT

01 April 1995

Revision 0

EXTRACTS

Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow.

PREPARED BY:
Southwest Division, Naval Facilities Engineering Command
1220 Pacific Highway
San Diego, California 92132-5190

THROUGH:
CONTRACT #N68711-89-D-9296
CTO #284
DOCUMENT CONTROL NO:
CLE-C01-01F284-S2-0004

WITH:
Jacobs Engineering Group Inc.
401 West A Street, Suite 1905
San Diego, California 92101

In association with:
International Technology Corporation
CH2M HILL

Table 3-7
Less Than 90-Day Accumulation Area Inventory
MCAS El Toro EBS Report - April 1995

Database Tracking	Building Number	Status	SWMU/ AOC	Comments	AREA TYPE
SAA 441	441	Inactive	256	RFA recommended NFA	3
SAA 442	442	Inactive	126	Sampling Visit Not Recommended During PR/VSI	2
SAA 445	445	Inactive	127	Sampling Visit Not Recommended During PR/VSI	2
SAA 447	447	Inactive	130	RFA recommended NFA	3
SAA 456	456	Inactive	135	Sampling Visit Not Recommended During PR/VSI	2
SAA 461	461	Active	138	RFA recommended NFA (1)	2
SAA 462	462	Active	140	Sampling Visit Not Recommended During PR/VSI	2
SAA 529	529	Inactive	144	RFA recommended NFA	2
SAA 534	534	Inactive	146	Sampling Visit Not Recommended During PR/VSI	2
SAA 602	602	Inactive	147	RFA recommended NFA	3
SAA 605	605	Active	149	RFA recommended NFA	3
SAA 606	606	Active	255	RFA recommended NFA	2
SAA 626	626	Active	158	IRP Site 20 (1)	7
SAA 634	634	Active		Identified in 1994 SPCC Plan	7
SAA 636	636	Inactive	160	RFA recommended NFA	3
SAA 651	651	Active	165	Located within SWMU/AOC 164	3
SAA 658	658	Active	171	Shallow soil borings recommended	7
SAA 671	671	Active	172	RFA recommended NFA	2
SAA 672	672	Inactive	177	Sampling Visit Not Recommended During PR/VSI	2
SAA 673	673	Active	186	RFA recommended NFA	2
SAA 693	693	Active		Identified in Station's HW Open Drum Inspection Report	7
SAA 698	698	Active		Identified in 1994 SPCC Plan	7
SAA 744	744	Active		Identified in 1994 SPCC Plan	7
SAA 746	746	Active		Identified in Station's HW Open Drum Inspection Report	7
SAA 747	747	Actvie		Identified in Station's HW Open Drum Inspection Report	7
SAA 761	761	Inactive		Located at IRP Site 6 (2)	7
SAA 765	765	Inactive	266	Sampling Visit Not Recommended During PR/VSI	2
SAA 769	769	Inactive	222	RFA recommended NFA	2
SAA 770	770	Inactive	223	RFA recommended NFA	3
SAA 771	771	Inactive	224	RFA recommended NFA	2
SAA 772	772	Inactive	225	RFA recommended NFA	3
SAA 778	778	Inactive	226	RFA recommended NFA	3
SAA 779	779	Inactive	227	RFA recommended NFA	3
SAA 800	800	Active	229	RFA recommended NFA	2
SAA 831	831	Active		Identified in Station's HW Open Drum Inspection Report	7
SAA 856	856	Active	234	RFA recommended NFA	3
SAA 900	900	Active		Environmental Office accumulation area	7

Annotations made by the writer of the Summary Report are identified with a star symbol or an arrow

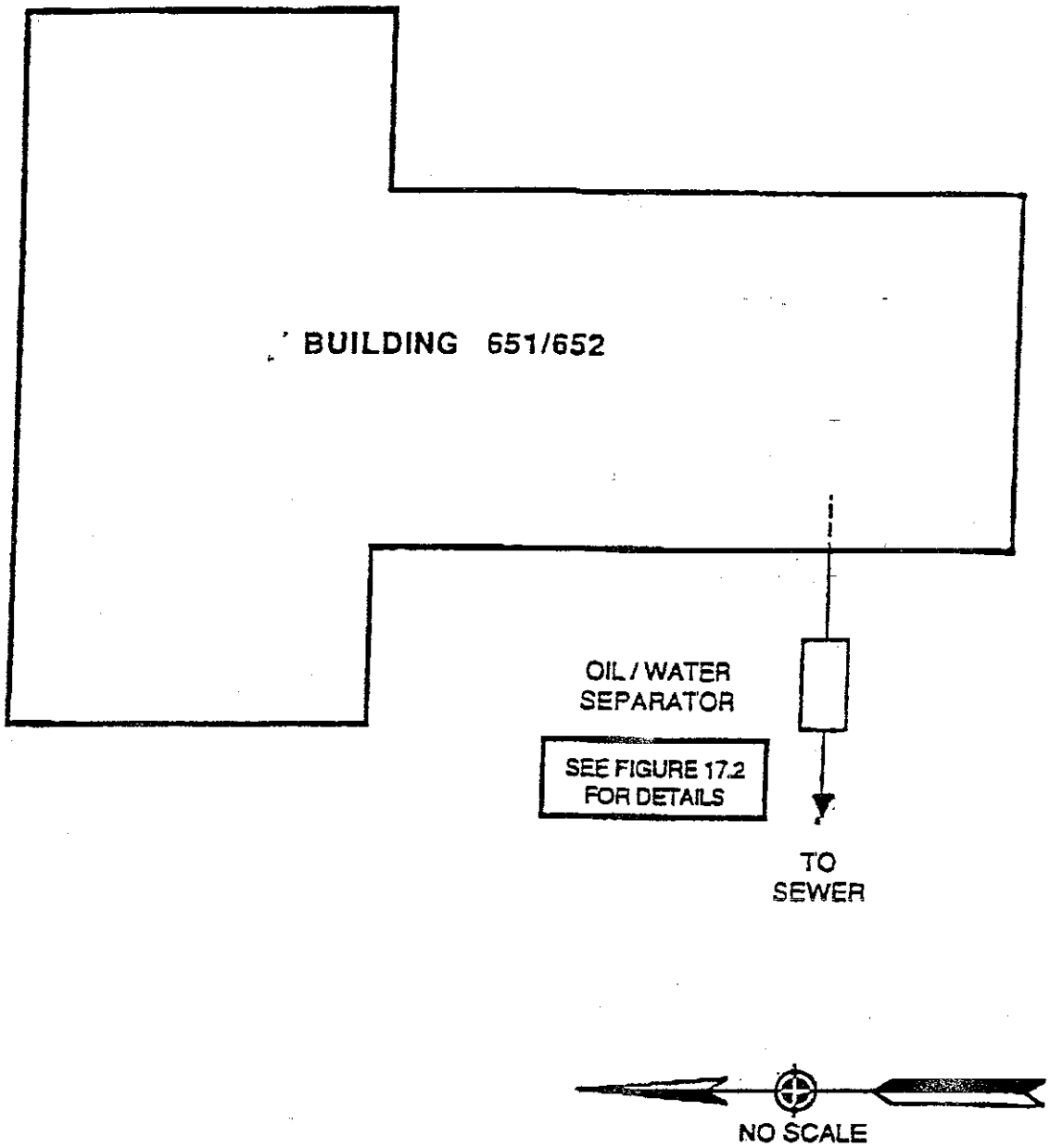
☆ SAA (Satellite Accumulation Area) 651 is also known as TAA 651A that is located on SWMU 164 (washrack).

Table 3-7
Less Than 90-Day Accumulation Area Inventory
MCAS El Toro EBS Report - April 1995

Database Tracking	Building Number	Status	SWMU/ AOC	Comments	AREA TYPE

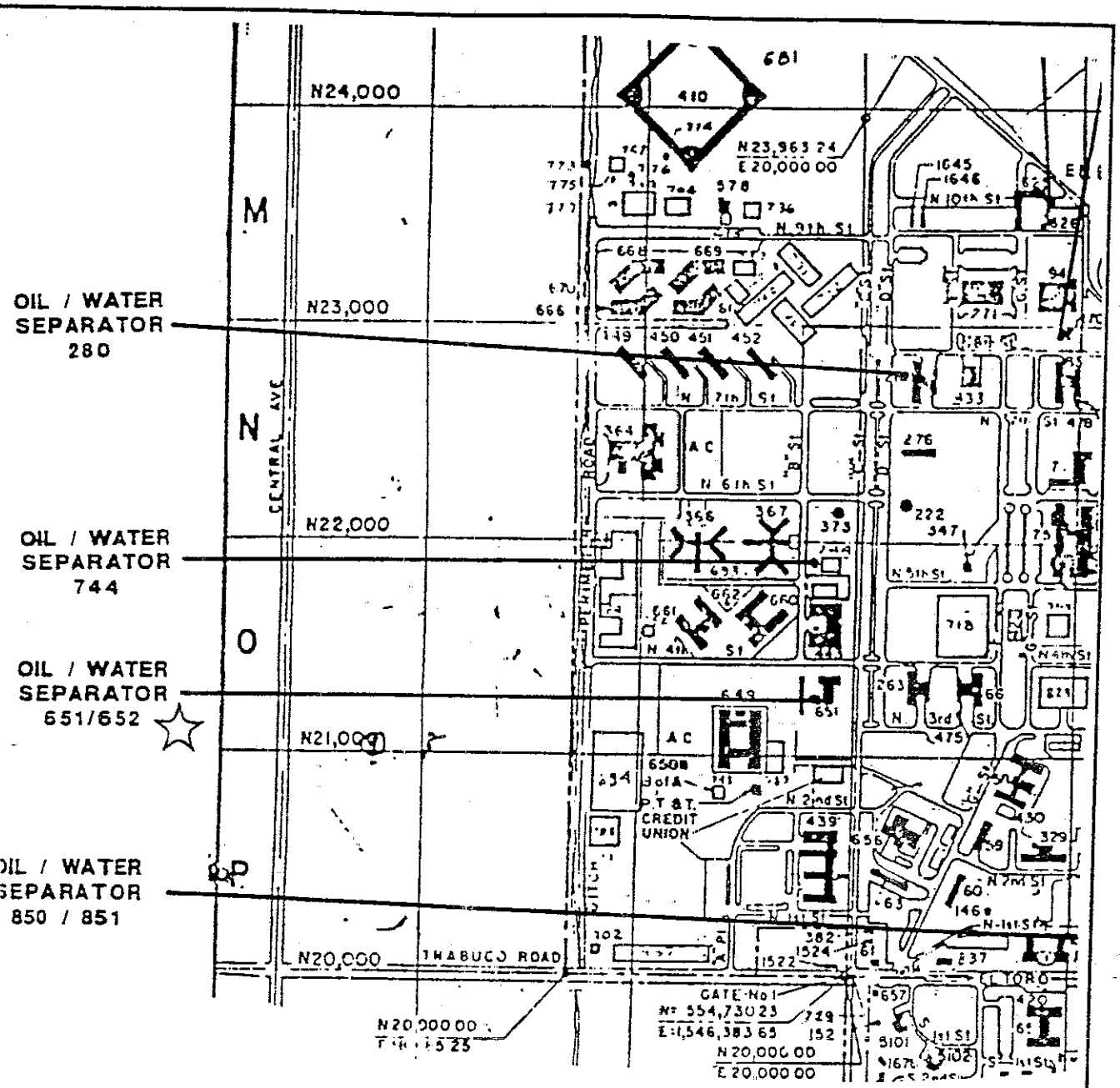
NOTES:
(1) - SWMUs/AOCs that were determined to be located within RI/FS site boundaries were eliminated from RFA sampling visits
These SWMUs/AOCs will be investigated in the IRP
(2) - Accumulation areas are currently being evaluated for removal and/or decontamination strategies
* - Indicates RFA recommendation of "no further action" is pending U.S. EPA approval
PR/VSI - Preliminary Review/Visual Site Inspection performed as part of the RFA.
IRP - Installation Restoration Program
RFA - RCRA Facility Assessment
NFA - No Further Action

Sources:
Jacobs, 1993. MCAS El Toro Final RCRA Facility Assessment Report.
MCAS El Toro Hazardous Waste Open Drum Inspection Report Sheet
SAIC, 1994. Draft Oil and Hazardous Substances Spill Prevention and Countermeasure Plan and Contingency Plan (SPCC).



EL TORO MCAS
OIL WATER SEPARATOR
651/652

FIGURE 17.1



Source: Law/Crandall, Incorporated (LCI). 1993.
Oil/Water Separator Survey, Marine Corps Air Station, El Toro, California,
for Department of the Navy, Southwest Division,
Naval Facilities Engineering Command,
IQ Contract N68711-92-D-4652, Delivery Order No. 001.
[LCI Project No. S92174 FB]

Oil/Water Separator Closure Report

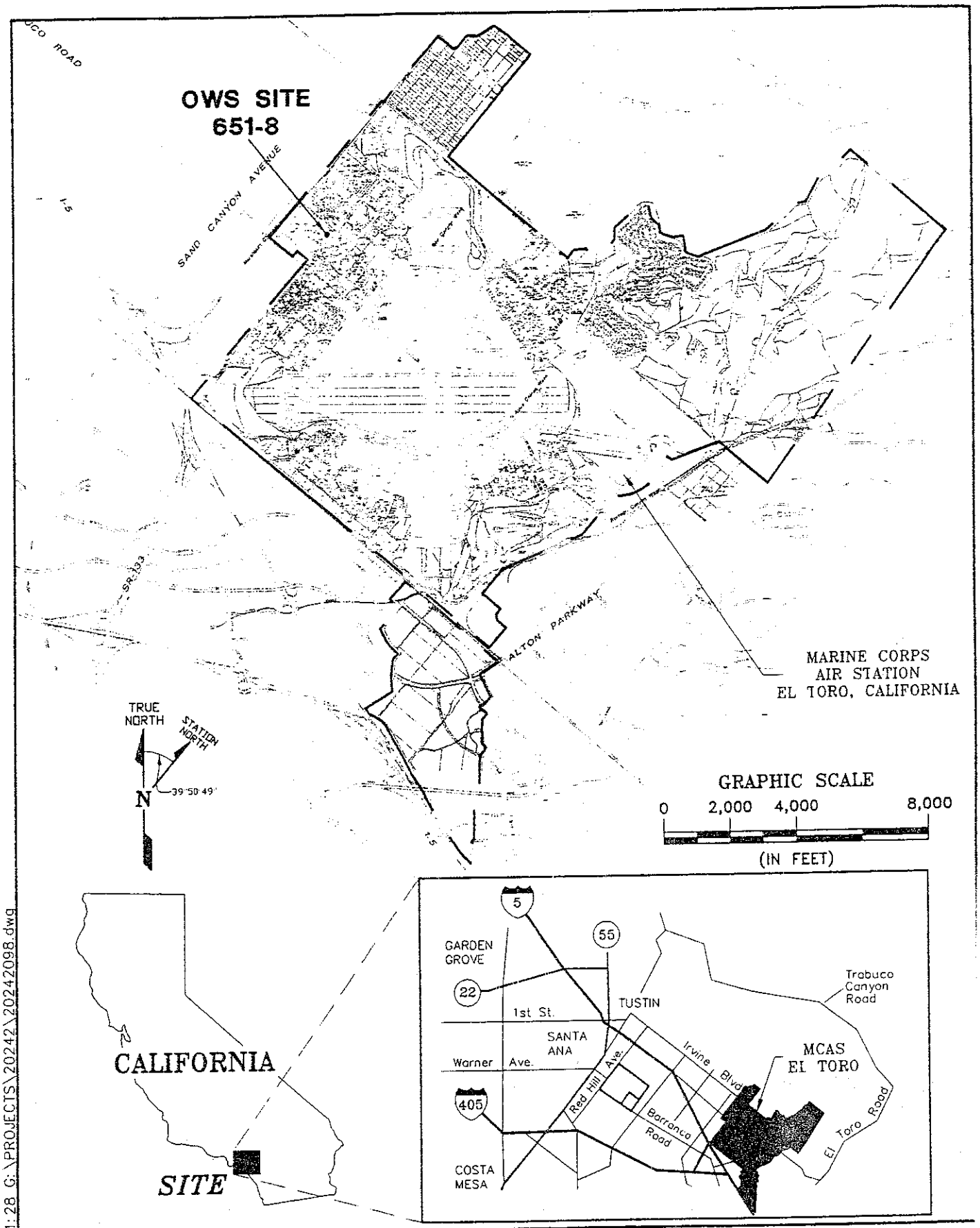
Oil/Water Separator Site 651-8
Marine Corps Air Station
El Toro, California

SWDIV Contract No. N68711-93-D-1459, Delivery Order No. 0112
OHM Project No. 20242
Document Control No. SW5894
Revision 0
March 12, 1999

Extracts

OHM Remediation Services Corp.

1202 Kettner Boulevard
San Diego, California 92101



OHM Remediation Services Corp
A Subsidiary of OHM Corporation
SAN DIEGO CA

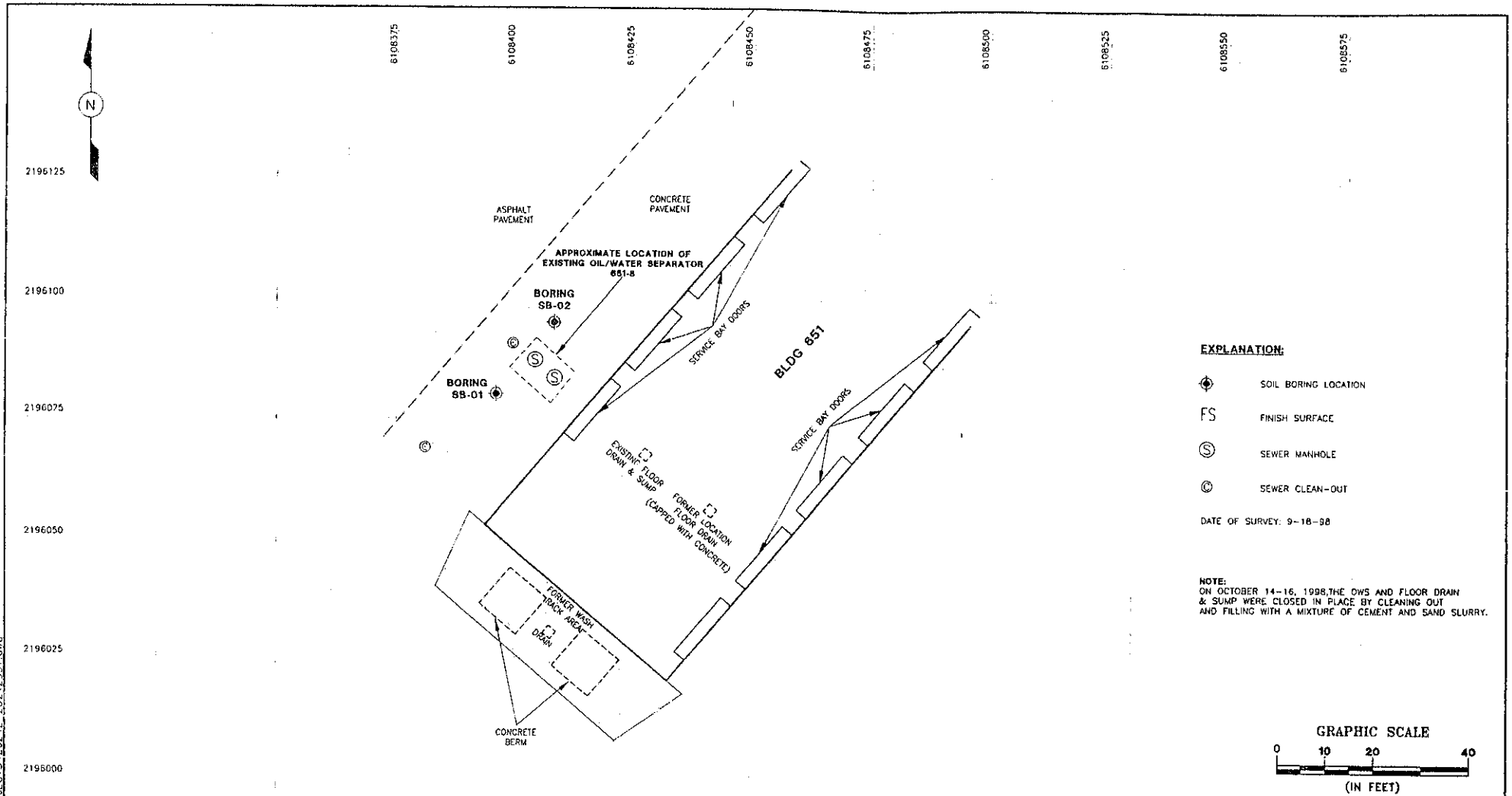
DRAWN BY R. PIRMORADIAN	DATE 03/09/99	FACILITY LOCATION MAP OWS SITE 651-8
CHECKED BY DR	DATE 3/10/99	
APPROVED BY WS	DATE 3/11/99	MARINE CORPS AIR STATION EL TORO, CALIFORNIA
PROJECT MANAGER	DATE 3/12/99	

CONTRACT NAME: SWDIV

AUTOCAD FILE No.	PLOT SCALE	SHEET	OF	SCALE	DOCUMENT CONTROL No.	OHM PROJECT No.	FIGURE No	REVISION
20242098.DWG	1=1	1	1	1 =4,000	SW5894	20242	FIG 1-1	0

Mar 09, 1999 - 14:31:28 G:\PROJECTS\20242\20242098.dwg

Reduced



SAMPLE COORDINATE LISTING

DESCRIPTION	NORTHING	EASTING	ELEV.
SB-01	2196080.2813	6108395.9620	303.71
SB-02	2196095.3475	6108408.1179	303.83

REVISIONS

REV. NO.	DESCRIPTION	DATE	APPROVED
FS	97102-99.DWG BY CALVADA SURVEYING INC.	9/18/98	

CONTRACT NAME: SWDIV

DRAWN BY: R. PIRMORADIAN DATE: 03/09/99

CHECKED BY: DR DATE: 3/1/99

APPROVED BY: DATE:

PROJECT MANAGER: DATE: 3/12/99

CAD FILE: 24209...

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

SITE PLAN
OWS SITE 651-8

MARINE CORPS AIR STATION
...RO, C...RNIA

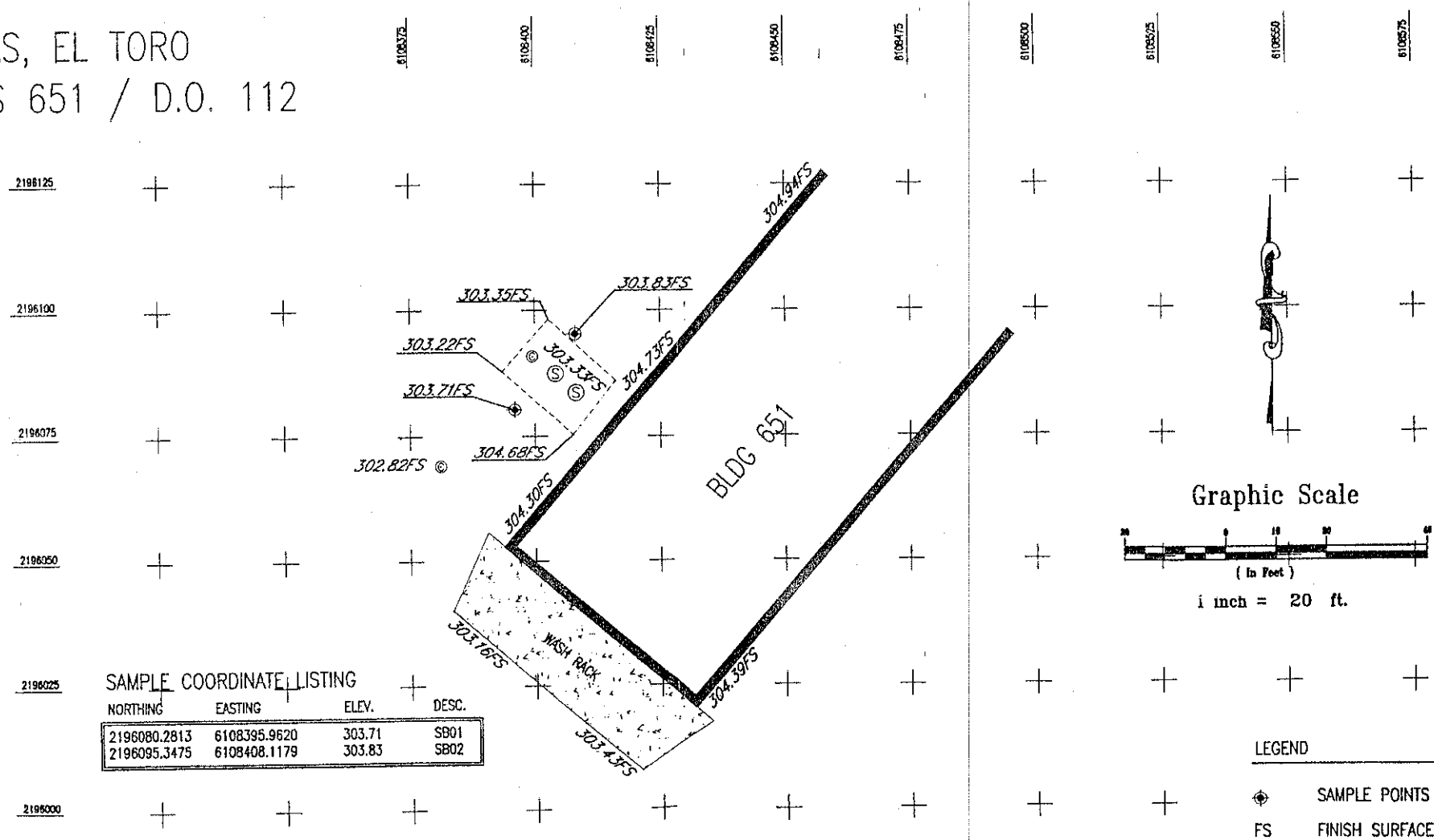
1999 - 11:29:11 G:\PROJECTS\20242\20242097.dwg

Table 4 - 1
Summary of Analytical Results - OWS Site 651-8

OHM Sample Number		20242-542	20242-543	20242-544	20242-545	20242-546	20242-547	20242-548	20242-549
Sample Location		OWS651-8-SB01	OWS651-8-SB01	OWS651-8-SB01	OWS651-8-SB01	OWS651-8-SB02	OWS651-8-SB02 (Dup)	OWS651-8-SB02	OWS651-8-SB02
Date Collected		09/17/98	09/17/98	09/17/98	09/17/98	09/18/98	09/18/98	09/18/98	09/18/98
Sample Depth (feet below ground surface)		11.0	21.0	31.0	41.0	11.0	21.0	20.5	31.0
	Unit								
CA LUFT 8015M									
TPH as Gasoline	mg/kg	1.1 U	1.2 U	1.2 U	1.1 U	1.1 U	1.2 U	1.2 U	1.1 U
Unknown Volatile Hydrocarbons	mg/kg	0.22 J	1.2 U	0.21 J	0.28 J	1.1 U	1.2 U	1.2 U	1.1 U
TPH as Diesel	mg/kg	11 U	12 U	12 U	11 U	11 U	12 U	12 U	11 U
TPH as JP-5	mg/kg	11 U	12 U	12 U	11 U	11 U	12 U	12 U	11 U
Unknown Hydrocarbons	mg/kg	11 U	12 U	12 U	11 U	78	12 U	12 U	11 U
EPA 8020									
Benzene	mg/kg	0.0057 U	0.0059 U	0.0059 U	0.0056 U	0.0054 U	0.0022 J	0.0058 U	0.0057 U
Ethylbenzene	mg/kg	0.0057 U	0.0059 U	0.0059 U	0.0056 U	0.0054 U	0.0042 J	0.0058 U	0.0057 U
Methyl tert-butyl ether (MTBE)	mg/kg	0.057 U	0.059 U	0.059 U	0.056 U	0.054 U	0.058 U	0.058 U	0.057 U
Toluene	mg/kg	0.0057 U	0.0059 U	0.0059 U	0.0056 U	0.0054 U	0.0035 J	0.0058 U	0.0057 U
Xylenes (total)	mg/kg	0.017 U	0.018 U	0.018 U	0.017 U	0.016 U	0.015 J	0.017 U	0.017 U

Explanation:
CA LUFT - California leaking underground fuel tank
EPA - U.S. Environmental Protection Agency
J - estimated
M - modified
mg/kg - milligrams per kilogram
NA - not analyzed
OHM - OHM Remediation Services Corp.
SB - soil boring
TPH - total petroleum hydrocarbons
U - not detected above or equal to the stated reporting limit
UST - underground storage tank

MCAS, EL TORO
OWS 651 / D.O. 112



SAMPLE COORDINATE LISTING

NORTHING	EASTING	ELEV.	DESC.
2196080.2813	6108395.9620	303.71	SB01
2196095.3475	6108408.1179	303.83	SB02

Graphic Scale

(In Feet)

1 inch = 20 ft.

LEGEND

- ◈ SAMPLE POINTS
- FS FINISH SURFACE
- Ⓢ SEWER MANHOLE
- © SEWER CLEAN-OUT

DATE OF SURVEY: 9-18-98

CAL VADA SURVEYING, INC.
108 Business Center Dr, Corona, Ca 91720
1 800 CALVADA PHONE: (909) 280-9980 FAX: (909) 280-9746
WEB SITE http://www.calvada.com

JOB NO. 97102-00

PREPARED FOR:

IT CORPORATION
3347 MICHELSON DR., SUITE 200
IRVINE, CA 92612-1692
(949) 660-7594

REVISIONS		
REV NO.	DESCRIPTION	DATE

03, 1999 - 14:40:31 G:\PROJECTS\20242\20242097.dwg

TOM URAM
DIRECTOR

HUGH F. STALLWORTH, M.D.
HEALTH OFFICER

JACK MILLER, REHS
DEPUTY DIRECTOR

MAILING ADDRESS
2009 EAST EDINGER AVENUE
SANTA ANA, CA 92705-4720

TELEPHONE (714) 667-3600
FAX (714) 972-0743

COUNTY OF ORANGE
HEALTH CARE AGENCY

PUBLIC HEALTH
DIVISION OF ENVIRONMENTAL HEALTH

July 11, 1997

LT. Hope Katcharian
Director, Environmental Engineering Division
Commanding General
AC/S Environmental 1AU
Marine Corps Air Station El Toro
P.O. Box 95001
Santa Ana, CA 92709-5001

Subject: Completion of Tank Removal Project

RE: Marine Corps Air Station El Toro
Tanks #651-5, 651-6 and 651-7
Santa Ana, CA 92709

Dear Lt. Katcharian:

This is in response to your request for a confirmation of the completion of the tank removal project. With the provision that the results for the soil samples obtained during the tank removal on April 15 and 18, 1997, were accurate and representative of existing conditions, it is the position of this office that no significant soil contamination has occurred at the above noted facility location.

It should be pointed out that this letter does not relieve you of any responsibilities mandated under the California Health and Safety Code if additional or previously unidentified contamination is discovered at the subject site.

If you have any questions regarding this matter, please contact Arghavan Rashidi-Fard at (714) 667-3713.

Sincerely,

William J. Diekmann, M.S., REHS
Supervising Hazardous Waste Specialist
Hazardous Materials Management Section
Environmental Health Division

cc: Larry Vitale, Santa Ana Regional Water Quality Control Board

Department of Toxic Substances Control

Jesse R. Huff, Director
5796 Corporate Avenue
Cypress, California 90630

Gray Davis
Governor

Winston Hickox
Secretary for
Environmental
Protection

March 17, 1999

Mr. Joseph Joyce
BRAC Environmental Coordinator
U.S. Marine Corps Air Station - El Toro
AC/S, Environmental (IAU), BRAC Building #899
P. O. Box 95001
Santa Ana, California 92709-5001

Dear Mr. Joyce:

COMMENTS ON TECHNICAL MEMORANDA FOR OIL WATER SEPARATORS (OWSs) 244, 388C, 392, 652, AND 676, UNDERGROUND STORAGE TANKS (USTs) 673B AND 380B, AND SOLID WASTE MANAGEMENT UNIT (SWMU) 273, MARINE CORPS AIR STATION (MCAS) El TORO

The Department of Toxic Substances Control (DTSC) has reviewed eight (8) Technical Memoranda dated 1998 and received by us on February 19, 1999. These Technical Memoranda provide supporting documentation for the deletion of the eight (8) sites from the Base Realignment and Closure Cleanup Plan (BCP) (1999 update) for MCAS El Toro. The information provided includes historical records and current environmental program management plans and reports, and site inspections reports in support of the determination that the sites do not exist or that they were incorrectly designated as Environmental Locations of Concern (LOCs).

DTSC comments are as follows:

1. DTSC concurs with your determination that OWSs 244, 388C, 392, and 652 were incorrectly designated as LOCs. We also concur that UST 380B and SWMU 273 were incorrectly designated as LOCs. These LOCs can be deleted from the 1999 BCP.

2. DTSC will not be able to concur with your determination for OWS 676 until we have had a chance to inspect the area of this site. DTSC staff plans to conduct a visual inspection of the site on March 25, 1999. Please provide escorts to DTSC staff on March 25 to conduct inspection.

3. DTSC does not concur with your determination that UST 673B is a "phantom" site, because we do not accept your statement that a visual site inspection would reveal the presence of an underground storage tank. Please provide additional information to support your claim, or conduct a geophysical survey to verify the existence of the tank

If you have any questions, please contact me at (714) 484-5418.

Sincerely,

Tayseer Mahmoud
Remedial Project Manager
Office of Military Facilities
Southern California Operations

cc: Mr. Glenn Kistner, SFD-8-2
Remedial Project Manager
U. S. Environmental Protection Agency
Region IX, Superfund Division
75 Hawthorne Street
San Francisco, California 94105-3901

Ms. Patricia Hannon
Remedial Project Manager
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, California 92501-3339

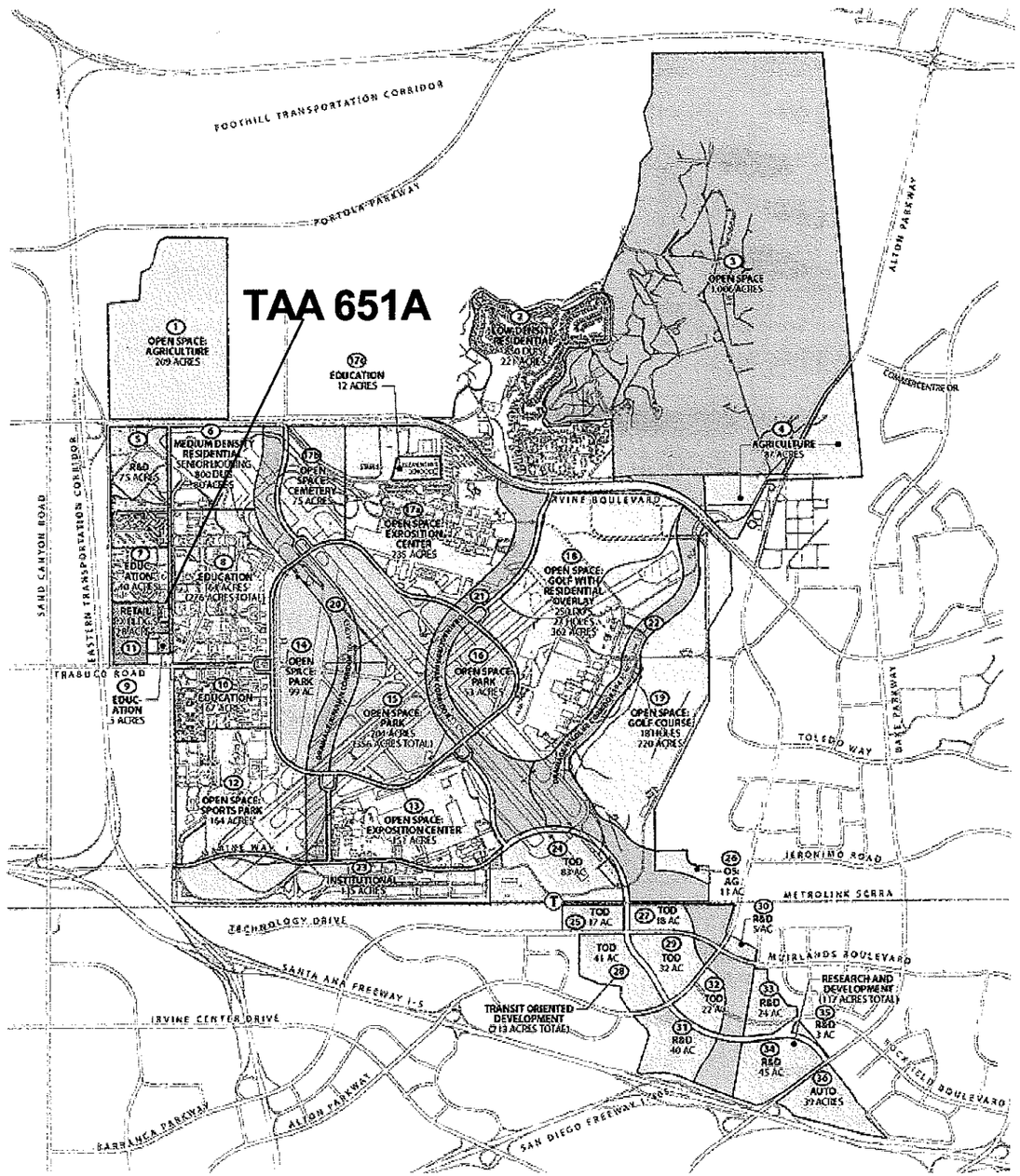
Mr. Gregory F. Hurley
Restoration Advisory Board Co-chair
620 Newport Center Drive, Suite 450
Newport Beach, California 92660-8019

Ms. Polin Modanlou
MCAS El Toro Local Redevelopment Authority
10 Civic Center Plaza, 2nd Floor
Santa Ana, California 92703

cc: Mr. Bill Sedlak
OHM Remediation Services Corp.
2031 Main Street
Irvine, California 92614

Ms. Lynn Hornecker
Remedial Project Manager
Naval Facilities Engineering Command
Southwest Division - Code 5BME.LH
1220 Pacific Highway
San Diego, California 92132-5187

APPENDIX B
GREAT PARK LAND USE PLAN

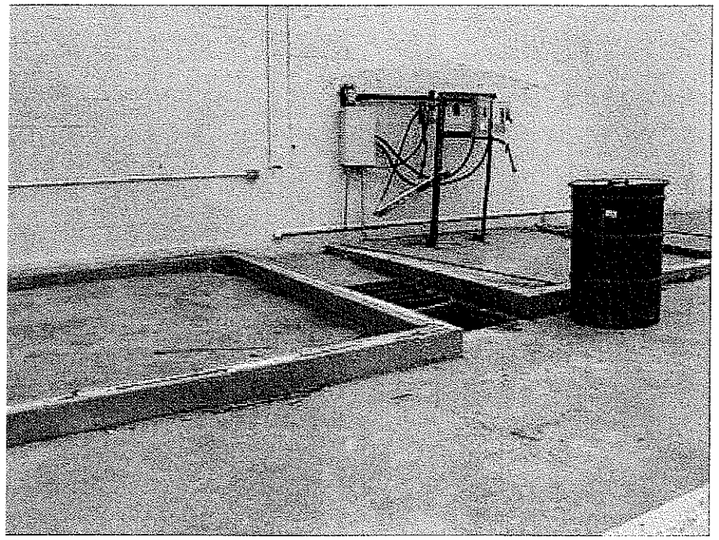


Great Park Land Use Plan

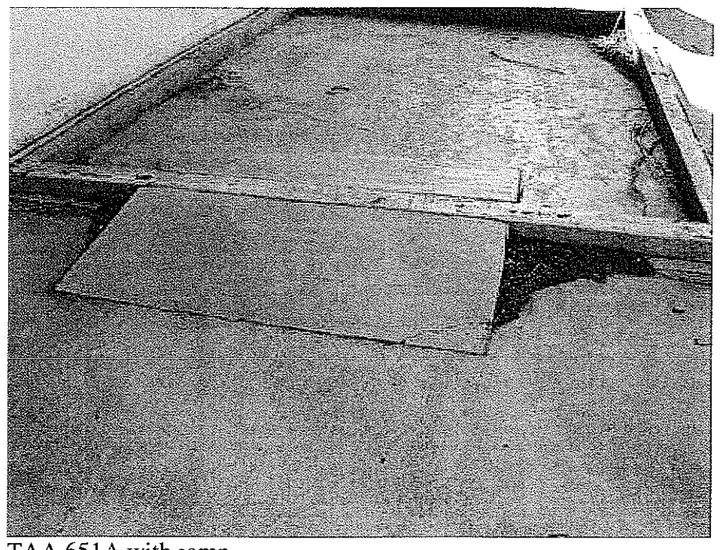
The Orange County Great Park

June 12, 2002

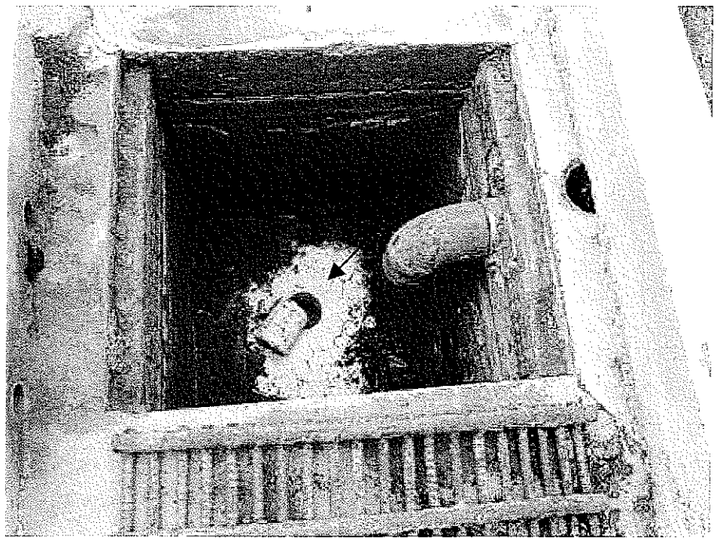
APPENDIX C
PHOTOLOG



TAA 651A and Building 651.



TAA 651A with ramp.

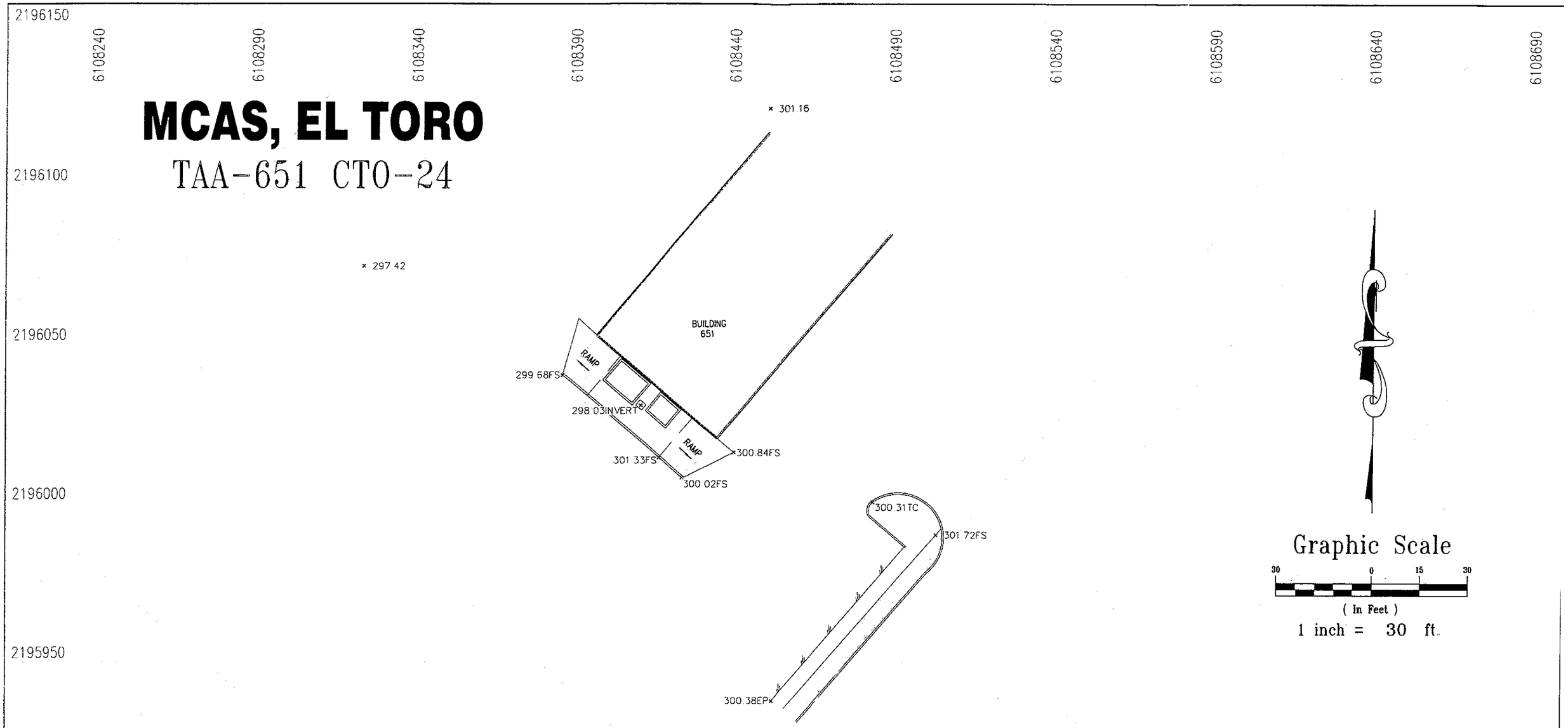


TAA 651A sump, with sample location

APPENDIX D
LAND SURVEY DRAWING

MCAS, EL TORO

TAA-651 CTO-24



Graphic Scale

30 0 15 30

(In Feet)

1 inch = 30 ft.

LEGEND

⊕	SAMPLE POINTS
NG	NATURAL GRADE
FS	FINISH SURFACE
FL	FLOW LINE
FH	FIRE HYDRANT
—	WOOD FENCE

DATE OF SURVEY: 10-03-2002

LICENSED LAND SURVEYOR
EDWARD L. SCHERET
L.S. 4240
Exp. 6-30-04
STATE OF CALIFORNIA

CAL VADA SURVEYING, INC.

108 Business Center Dr, Corona, Ca 92880-1782
PHONE: (909) 280-9960 FAX: (909) 280-9746

JOB NO. 97102-TAA651

PREPARED FOR:

IT CORPORATION
3347 MICHELSON DR., SUITE 200
IRVINE, CA 92612-1692
(949) 660-7594

APPENDIX E
WASTE MANIFEST

State of California—Environmental Protection Agency
Form Approved OMB No. 2050-0039 (Expires 9-30-99)
Please print or type. *Form designed for use on elite (12-pitch) typewriter*

See Instructions on back of page 6.

Department of Toxic Substances Control
Sacramento, California

UNIFORM HAZARDOUS WASTE MANIFEST

1 Generator's US EPA ID No.: CA6170023208 — Manifest Document No.: 12001

2 Page 1 of 1

Information in the shaded areas is not required by Federal law.

3 Generator's Name and Mailing Address
MCAS El Toro
Caretaker Site Office, P.O. Box 444 East Irvine CA 92650

4 Generator's Phone ((949) 726-2506 Attn: Scott Kehe

A State Manifest Document Number: 21510060

B State Generator's ID: HAHQ3603891

5 Transporter 1 Company Name: Joe Torres Trucking

6 US EPA ID Number: CAD980887046

C State Transporter's ID [Reserved]

D Transporter's Phone: (661) 832-2635

7 Transporter 2 Company Name

8 US EPA ID Number

E State Transporter's ID [Reserved]

F Transporter's Phone

9 Designated Facility Name and Site Address
Crosby & Overton Inc
1630 West 17th Street
Long Beach CA 90813

10 US EPA ID Number: CAD028409019

G State Facility's ID

H Facility's Phone: (562) 432-5445

11 US DOT Description (including Proper Shipping Name, Hazard Class, and ID Number)	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste Number
9ch-RCRA hazardous waste liquid		DM		G	State 132 / EPA/Other n/r
9ch-RCRA hazardous waste solid	[illegible]	DM	[illegible]	Y	State 181 / EPA/Other n/r
c.					State / EPA/Other
d					State / EPA/Other

J Additional Descriptions for Materials Listed Above
11a. Profile #38802: soil & water with lead
11b. Profile #38803: soil with lead
Fax copy of TSDF signed manifest to: Steve Chandler, Shaw E & I at fax number(949) 474-8309

K Handling Codes for Wastes Listed Above
a. b. c. d.

15 Special Handling Instructions and Additional Information
Caution: Wear appropriate protective clothing and respiratory protection when handling.

Site pick up address:
MCAS El Toro TAA 636 & 651A

16 **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name: Scott Kehe — Signature: [signature] — Month 2 Day 19 Year 02

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ENRIQUE HERNANDEZ — Signature: [signature] — Month 2 Day 19 Year 02

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name — Signature — Month Day Year

19 Discrepancy Indication Space

20. Facility Owner or Operator Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name — Signature — Month Day Year

GENERATOR — TRANSPORTER — FACILITY

IN CASE OF EMERGENCY OR SPILL, CALL THE NATIONAL RESPONSE CENTER 1-800-424-8802; WITHIN CALIFORNIA, CALL 1-800-852-7550

DO NOT WRITE BELOW THIS LINE.

DTSC 8022A (1/99)
EPA 8700—22

Blue: GENERATOR SENDS THIS COPY TO DTSC WITHIN 30 DAYS
To: P.O. Box 400, Sacramento, CA 95812-0400

APPENDIX F
LABORATORY ANALYTICAL REPORT

the IT group

IT Corporation
2790 Mosside Blvd.
Monroeville, PA 15146-2792
(412)372-7701

CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGER'S COPY

A 14695

02-K106

FORM 0019 REV. 9-99

IT'S LAB COORDINATOR: Lynn Jefferson	LAB COORDINATOR'S PHONE: 949-660-7587	LAB COORDINATOR'S FAX: 949-475-5433	LABORATORY SERVICE ID: EMAX	LABORATORY CONTACT: Ye Myint	MAIL REPORT (COMPANY NAME): Shaw E+I
PROJECT NAME: MCAS El Toro	PROJECT LOCATION: MCAS El Toro	PROJECT NUMBER: 818655	LABORATORY PHONE: 310-618-8889	LABORATORY FAX: —	RECIPIENT NAME: Dwayne Ishida
PROJECT CONTACT: Dhananjay Rawal	PROJECT PHONE NUMBER: 949-660-7576	PROJECT FAX: 949-474-8309	LABORATORY ADDRESS: 1835 W. 205th St.		ADDRESS: 3347 Michelson Dr. #200
PROJECT ADDRESS: MCAS El Toro	CITY, STATE AND ZIP CODE: Santa Ana, CA	CLIENT: EFA West	CITY, STATE AND ZIP CODE: Torrance, CA 90501		CITY, STATE AND ZIP CODE: Irvine, CA 92612
PROJECT MANAGER: Dhananjay Rawal	PROJECT MANAGER'S PHONE: 949-660-7576	PROJECT MANAGER'S FAX: 949-474-8309			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 8260B (VOCs)	SVOC + Sims (8270)	8015 (Gas)	8015 (Diesel)	8081 (Pesticides)	8082 (PCB)	6010 (metals)		Comments
1	818655-B3103	S	11/12	1010	4°C	2	3	5 day	x	x	x	x	x	x	x		No Sims. Only SVOC for 8270 Composite
2	818655-B3104	S		1100	4°C	2	3	5 day	x	x	x	x	x	x	x		No Sims only SVOC for 8270
3	818655-B3105	W		1000	4°C	3	3	5 day	x								
4	818655-B3106	S		1110	4°C	7	3	5 day	x	x	x	x	x	x	x		
5	818655-B3107	S		1115		7	3	5 day	x	x	x	x	x	x	x		
6	818655-B3108	S		1125		2	3	5 day	x	x	x	x	x	x	x		No Sims
7	818655-B3109	S		1140		7	4	5 day	x	x	x	x	x	x	x		
8	818655-B3110	S		1145		7	3	5 day	x	x	x	x	x	x	x		
9	818655-B3111	W		1315		10	3	5 day	x	x	x	x	x	x	x		No Sims
10	~~818655-B3112~~	S					3	5 day	x	x	x	x	x	x	x		Composite Samples B3103, B3104, B3108 into one sample for analysis

SAMPLES COLLECTED BY: Way-Lynn Jeffer

COURIER AND AIR BILL NUMBER: Courier

COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
Way-Lynn Jeffer	[signature]	11-12-02	3.30	

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Manilla - 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 TAA636-Drum		X		
② TAA651A Drum				
③ Trip Blank				
④ TAA651A 18" below Sump				
⑤ TAA651A 36" below Sump				
⑥ TAA955 Drum				
⑦ TAA31A ~~36"~~ 18" below Sump				
⑧ TAA31A ~~48"~~ 36" below Sump				
⑨ Equipment Rinsate				
⑧ Composite Sample				

Comments

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

the IT group

IT Corporation
2790 Mosside Blvd.
Monroeville, PA 15146-2792
(412)372-7701

CHAIN-OF-CUSTODY RECORD

PROJECT DATA MANAGER'S COPY

A 14696

02-K106

FORM 0019 REV. 9-99

IT'S LAB COORDINATOR: LYNN JEFFERSON	LAB COORDINATOR'S PHONE: 949-660-7537	LAB COORDINATOR'S FAX: 949-475-5433	LABORATORY SERVICE ID: EMAX	LABORATORY CONTACT: YE MYINT	MAIL REPORT (COMPANY NAME): SHAW E+I
PROJECT NAME: MCAS EL TORO	PROJECT LOCATION: MCAS EL TORO	PROJECT NUMBER: 818655	LABORATORY PHONE: 310-618-8889	LABORATORY FAX:	RECIPIENT NAME: DWAYNE ISHIDA
PROJECT CONTACT: DHANANJAY RAWAL	PROJECT PHONE NUMBER: 949-660-7576	PROJECT FAX: 949-474-8309	LABORATORY ADDRESS: 1835 W 205th ST.		ADDRESS: 3347 MICHELSON DR. #200
PROJECT ADDRESS: MCAS EL TORO	CITY, STATE AND ZIP CODE: SANTA ANA, CA	CLIENT: EFA WEST	CITY, STATE AND ZIP CODE: TORRANCE, CA 90501		CITY, STATE AND ZIP CODE: IRVINE, CA 92612
PROJECT MANAGER: DHANANJAY RAWAL	PROJECT MANAGER'S PHONE: 949-660-7576	PROJECT MANAGER'S FAX: 949-474-8309			

Item	Sample Identifier	Matrix	Date	Time	Preserved	# of Cont.	QC Level	T.A.T.	Analyses: 8260B (VOCS)	SVOC + SIMS (8270)	8015 (GAS)	8015 (DIESEL)	8081 (PESTICIDES)	8082 (PCB)	6010 (METALS)		Comments
1	818655-B3113	S	11/12/02	1230	4°C	?	3	5 DAY	X	X	X	X	X	X	X		
2	818655-B3114	S	11/12/02	1240	4°C	?	3	5 day	X	X	X	X	X	X	X		
3	818655-																
4																	
5																	
6																	
7																	
8																	
9																	
10																	

W.J. 11/12/02

SAMPLES COLLECTED BY: Way-Lynn Jeffer

COURIER AND AIR BILL NUMBER: Courier

COOLER TEMPERATURE UPON RECEIPT:

RELINQUISHED BY	RECEIVED BY	DATE	TIME	SAMPLE'S CONDITION UPON RECEIPT
Way-Lynn Jeffer	[signature]	11-12-02	3:30	

Distribution: White - Laboratory (To be returned with Analytical Report); Goldenrod - Project File; Manilla - 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 TAA770	X			
~~18"~~ ~~36"~~ 18" below Sump				
② TAA770	X			
~~48"~~ 36" below Sump				

Comments

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

METHOD 5030B/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : SHAW E&I
Project : EL TORO, CTO 0024
Batch No. : 02K106

Matrix : WATER
Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SURR (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	VA39K16B	ND	98	1	NA	.1	.005	11/14/0207:12	11/14/0207:12	EK13031A	EK13025A	VA39K16	NA	11/14/02
LCS1W	VA39K16L	.594	128	1	NA	.1	.005	11/14/0206:04	11/14/0206:04	EK13029A	EK13025A	VA39K16	NA	11/14/02
LCD1W	VA39K16C	.557	123	1	NA	.1	.005	11/14/0206:38	11/14/0206:38	EK13030A	EK13025A	VA39K16	NA	11/14/02
818655-B3111	K106-09	ND	93	1	NA	.1	.005	11/14/0212:31	11/14/0212:31	EK13039A	EK13037A	VA39K16	11/12/02	11/12/02

RL : Reporting Limit

METHOD 5035/M8015
TOTAL PETROLEUM HYDROCARBONS BY PURGE AND TRAP

Client : SHAW E&I
Project : EL TORO, CTO 0024
Batch No. : 02K106

Matrix : SOIL
Instrument ID : GCT039

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	SURR (%)	DLF	MOIST	RL (mg/kg)	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1S	VM39K14B	ND	79	1	NA	10	.524	11/14/0200:25	11/14/0200:25	EK13019A	EK13013A	VM39K14	NA	11/14/02
LCS1S	VM39K14L	25.9	119	1	NA	10	.524	11/13/0223:17	11/13/0223:17	EK13017A	EK13013A	VM39K14	NA	11/13/02
LCD1S	VM39K14C	24	107	1	NA	10	.524	11/13/0223:51	11/13/0223:51	EK13018A	EK13013A	VM39K14	NA	11/13/02
818655-B3103(COMPOSITE)	K106-01	58	82	1	19.4	12	.65	11/14/0205:30	11/14/0205:30	EK13028A	EK13025A	VM39K14	11/12/02	11/12/02
818655-B3106	K106-04	ND	115	0.85	21.1	11	.56	11/14/0200:59	11/14/0200:59	EK13020A	EK13013A	VM39K14	11/12/02	11/12/02
818655-B3107	K106-05	ND	106	0.85	18.0	10	.54	11/14/0201:33	11/14/0201:33	EK13021A	EK13013A	VM39K14	11/12/02	11/12/02
818655-B3109	K106-07	ND	105	1.04	8.0	11	.59	11/14/0202:07	11/14/0202:07	EK13022A	EK13013A	VM39K14	11/12/02	11/12/02
818655-B3110	K106-08	ND	83	1.04	12.5	12	.62	11/14/0202:41	11/14/0202:41	EK13023A	EK13013A	VM39K14	11/12/02	11/12/02
818655-B3113	K106-10	ND	111	0.82	14.2	9.6	.5	11/14/0203:15	11/14/0203:15	EK13024A	EK13013A	VM39K14	11/12/02	11/12/02
818655-B3114	K106-11	ND	98	0.86	11.4	9.7	.51	11/14/0204:56	11/14/0204:56	EK13027A	EK13025A	VM39K14	11/12/02	11/12/02

RL : Reporting Limit
Metahnol Extraction: 11/13/02 17:30

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 5030B/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	VA39K16B	VA39K16L	VA39K16C		
LAB FILE ID:	EK13031A	EK13029A	EK13030A		
DATE EXTRACTED:	11/14/0207:12	11/14/0206:04	11/14/0206:38	DATE COLLECTED:	NA
DATE ANALYZED:	11/14/0207:12	11/14/0206:04	11/14/0206:38	DATE RECEIVED:	11/14/02
PREP. BATCH:	VA39K16	VA39K16	VA39K16		
CALIB. REF:	EK13025A	EK13025A	EK13025A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	.55	.594	108	.55	.557	101	6	67-136	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	.02	.0255	128	.02	.0246	123	63-154

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 5035/M8015

MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1S				
LAB SAMP ID:	VM39K14B	VM39K14L	VM39K14C		
LAB FILE ID:	EK13019A	EK13017A	EK13018A		
DATE EXTRACTED:	11/14/0200:25	11/13/0223:17	11/13/0223:51	DATE COLLECTED:	NA
DATE ANALYZED:	11/14/0200:25	11/13/0223:17	11/13/0223:51	DATE RECEIVED:	11/13/02
PREP. BATCH:	VM39K14	VM39K14	VM39K14		
CALIB. REF:	EK13013A	EK13013A	EK13013A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Gasoline	ND	27.5	25.9	94	27.5	24	87	7	57-146	50

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	SPIKE AMT (mg/kg)	BSD RSLT (mg/kg)	BSD % REC	QC LIMIT (%)
Bromofluorobenzene	1	1.19	119	1	1.07	107	63-154

METHOD 3520C/M8015
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : SHAW E&I
Project : EL TORO, CTO 0024
Batch No. : 02K106

Matrix : WATER
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/L)	SUR1 (%)	SUR2 (%)	DLF	MOIST	RL (mg/L)	MDL (mg/L)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Received DATETIME
MBLK1W	DSK018WB	ND	75	90	1	NA	.1	.1	11/15/0210:51	11/14/0212:30	TK13057A	TK13050A	DSK018W	NA	11/14/02
LCS1W	DSK018WL	4.63	69	101	1	NA	.1	.1	11/15/0211:40	11/14/0212:30	TK13058A	TK13050A	DSK018W	NA	11/14/02
LCD1W	DSK018WC	5.1	90	99	1	NA	.1	.1	11/15/0212:28	11/14/0212:30	TK13059A	TK13050A	DSK018W	NA	11/14/02
818655-B3111	K106-09	ND	81	97	.94	NA	.094	.094	11/15/0213:17	11/14/0212:30	TK13060A	TK13050A	DSK018W	11/12/02	11/12/02

RL : Reporting Limit
SURR1 : Bromobenzene
SURR2 : Hexacosane

Parameter	H-C Range
Diesel	C10-C38

5004

CA LUFT/M8015
TOTAL PETROLEUM HYDROCARBONS BY EXTRACTION

Client : SHAW E&I
Project : EL TORO, CTO 0024
Batch No. : 02K106

Matrix : SOIL
Instrument ID : GCT050

SAMPLE ID	EMAX SAMPLE ID	RESULTS (mg/kg)	SUR1 (%)	SUR2 (%)	DLF	MOIST	RL (mg/kg)	MDL (mg/kg)	Analysis DATETIME	Extraction DATETIME	LFID	CAL REF	PREP BATCH	Collection DATETIME	Receiv DATETI
MBLK1S	DSK019SB	ND	91	98	1	NA	10	4	11/15/0201:06	11/14/0212:15	TK13045A	TK13037A	DSK019S	NA	11/14/
LCS1S	DSK019SL	563	101	102	1	NA	10	4	11/15/0201:54	11/14/0212:15	TK13046A	TK13037A	DSK019S	NA	11/14/
818655-B3103(COMPOSITE)	K106-01T	7600	DO	DO	10	19.4	120	50	11/15/0202:43	11/14/0212:15	TK13047A	TK13037A	DSK019S	11/12/02	11/12/
818655-B3106	K106-04	ND	87	95	1	21.1	13	5.1	11/15/0203:32	11/14/0212:15	TK13048A	TK13037A	DSK019S	11/12/02	11/12/
818655-B3107	K106-05	ND	84	90	1	18.0	12	4.9	11/15/0204:21	11/14/0212:15	TK13049A	TK13037A	DSK019S	11/12/02	11/12/
818655-B3109	K106-07	ND	85	88	1	8.0	11	4.3	11/15/0205:58	11/14/0212:15	TK13051A	TK13050A	DSK019S	11/12/02	11/12/
818655-B3110	K106-08	93	84	95	1	12.5	11	4.6	11/15/0206:47	11/14/0212:15	TK13052A	TK13050A	DSK019S	11/12/02	11/12/
818655-B3113	K106-10	ND	86	92	1	14.2	12	4.7	11/15/0207:36	11/14/0212:15	TK13053A	TK13050A	DSK019S	11/12/02	11/12/
818655-B3114	K106-11	ND	82	86	1	11.4	11	4.5	11/15/0208:24	11/14/0212:15	TK13054A	TK13050A	DSK019S	11/12/02	11/12/
818655-B3114MS	K106-11M	571	95	91	1	11.4	11.3	4.51	11/15/0209:13	11/14/0212:15	TK13055A	TK13050A	DSK019S	11/12/02	11/12/
818655-B3114MSD	K106-11S	602	99	95	1	11.4	11.3	4.51	11/15/0210:02	11/14/0212:15	TK13056A	TK13050A	DSK019S	11/12/02	11/12/

RL : Reporting Limit
SURR1 : Bromobenzene
SURR2 : Hexacosane

Parameter	H-C Range
Diesel	C10-C38

5005

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 3520C/M8015

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	DSK018WB	DSK018WL	DSK018WC		
LAB FILE ID:	TK13057A	TK13058A	TK13059A		
DATE EXTRACTED:	11/14/0212:30	11/14/0212:30	11/14/0212:30	DATE COLLECTED:	NA
DATE ANALYZED:	11/15/0210:51	11/15/0211:40	11/15/0212:28	DATE RECEIVED:	11/14/02
PREP. BATCH:	DSK018W	DSK018W	DSK018W		
CALIB. REF:	TK13050A	TK13050A	TK13050A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/L)	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	5	4.63	93	5	5.1	102	10	65-135	30

SURROGATE PARAMETER	SPIKE AMT (mg/L)	BS RSLT (mg/L)	BS % REC	SPIKE AMT (mg/L)	BSD RSLT (mg/L)	BSD % REC	QC LIMIT (%)
Bromobenzene	1	.691	69	1	.901	90	50-150
Hexacosane	.25	.253	101	.25	.246	99	40-160

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: CA LUFT/M8015

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MATRIX:	SOIL		% MOISTURE:	NA
DILUTION FACTOR:	1	1		
SAMPLE ID:	MBLK1S			
LAB SAMP ID:	DSK019SB	DSK019SL		
LAB FILE ID:	TK13045A	TK13046A		
DATE EXTRACTED:	11/14/0212:15	11/14/0212:15	DATE COLLECTED:	NA
DATE ANALYZED:	11/15/0201:06	11/15/0201:54	DATE RECEIVED:	11/14/02
PREP. BATCH:	DSK019S	DSK019S		
CALIB. REF:	TK13037A	TK13037A		

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Diesel	ND	500	563	113	65-135

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SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Bromobenzene	100	101	101	50-150
Hexacosane	25	25.5	102	30-160

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: CA LUFT/M8015

MATRIX:	SOIL			% MOISTURE:	11.4
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	818655-B3114				
LAB SAMP ID:	K106-11	K106-11M	K106-11S		
LAB FILE ID:	TK13054A	TK13055A	TK13056A		
DATE EXTRACTED:	11/14/0212:15	11/14/0212:15	11/14/0212:15	DATE COLLECTED:	11/12/02
DATE ANALYZED:	11/15/0208:24	11/15/0209:13	11/15/0210:02	DATE RECEIVED:	11/12/02
PREP. BATCH:	DSK019S	DSK019S	DSK019S		
CALIB. REF:	TK13050A	TK13050A	TK13050A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
Diesel	ND	563	571	102	563	602	108	5	65-135	50

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	QC LIMIT (%)
Bromobenzene	113	108	95	113	111	99	45-165
Hexacosane	28.2	25.8	91	28.2	26.9	95	27-176

SW3520C/8081A
PESTICIDES

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/14/02 13:30
Sample ID:	818655-B3111	Date Analyzed:	11/16/02 04:46
Lab Samp ID:	K106-09	Dilution Factor:	.94
Lab File ID:	SK15035A	Matrix :	WATER
Ext Btch ID:	CPK016W	% Moisture :	NA
Calib. Ref.:	SK15029A	Instrument ID :	GCT008

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND)|ND	.094	.0094|.0094
GAMMA-BHC (LINDANE)	(ND)|ND	.094	.0094|.0094
BETA-BHC	(ND)|ND	.094	.0094|.0094
HEPTACHLOR	(ND)|ND	.094	.0094|.0094
DELTA-BHC	(ND)|ND	.094	.0094|.0094
ALDRIN	(ND)|ND	.094	.0094|.0094
HEPTACHLOR EPOXIDE	(ND)|ND	.094	.0094|.0094
GAMMA-CHLORDANE	(ND)|ND	.094	.0094|.0094
ALPHA-CHLORDANE	(ND)|ND	.094	.0094|.0094
ENDOSULFAN I	(ND)|ND	.094	.028|.028
4,4'-DDE	(ND)|ND	.19	.028|.028
DIELDRIN	(ND)|ND	.19	.094|.094
ENDRIN	(ND)|ND	.094	.0094|.0094
4,4'-DDD	(ND)|ND	.19	.028|.028
ENDOSULFAN II	(ND)|ND	.19	.0094|.0094
4,4'-DDT	(ND)|ND	.19	.019|.019
ENDRIN ALDEHYDE	(ND)|ND	.19	.0094|.0094
ENDOSULFAN SULFATE	(ND)|ND	.19	.0094|.0094
ENDRIN KETONE	(ND)|ND	.094	.0094|.0094
METHOXYCHLOR	(ND)|ND	.94	.094|.094
TOXAPHENE	(ND)|ND	2.8	1.2|1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	64|(65)	45-125
DECACHLOROBIPHENYL	(107)|104	34-133

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column

SW3550B/8081A
PESTICIDES

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/14/02 16:00
Sample ID:	818655-B3106	Date Analyzed:	11/16/02 15:17
Lab Samp ID:	K106-04	Dilution Factor:	1
Lab File ID:	SK15060A	Matrix :	SOIL
Ext Btch ID:	CPK017S	% Moisture :	21.1
Calib. Ref.:	SK15055A	Instrument ID :	GCT008

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(.00076J) | .00045J	.0025	.00025 | .00025
GAMMA-BHC (LINDANE)	(ND) | ND	.0025	.00025 | .00025
BETA-BHC	(ND) | ND	.0025	.00025 | .00025
HEPTACHLOR	(ND) | ND	.0025	.0013 | .0013
DELTA-BHC	(ND) | ND	.0025	.00025 | .00025
ALDRIN	(ND) | ND	.0025	.00063 | .00063
HEPTACHLOR EPOXIDE	(ND) | ND	.0025	.00025 | .00025
GAMMA-CHLORDANE	(ND) | ND	.0025	.00025 | .00025
ALPHA-CHLORDANE	.0015J | (ND)	.0025	.00025 | .00025
ENDOSULFAN I	(ND) | ND	.0051	.0013 | .0013
4,4'-DDE	(ND) | ND	.0051	.0013 | .0013
DIELDRIN	(ND) | ND	.0051	.00063 | .00063
ENDRIN	(ND) | ND	.0038	.0013 | .0013
4,4'-DDD	(ND) | ND	.0051	.0013 | .0013
ENDOSULFAN II	(ND) | ND	.0051	.00063 | .00063
4,4'-DDT	(ND) | ND	.0051	.0013 | .0013
ENDRIN ALDEHYDE	(ND) | ND	.0051	.00063 | .00063
ENDOSULFAN SULFATE	(ND) | ND	.0051	.00063 | .00063
ENDRIN KETONE	(ND) | ND	.0038	.0013 | .0013
METHOXYCHLOR	(ND) | ND	.025	.0051 | .0051
TOXAPHENE	(ND) | ND	.13	.01 | .01

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(86) | 83	35-135
DECACHLOROBIPHENYL	82 | (89)	25-143

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column

SW3550B/8081A
PESTICIDES

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/14/02 16:00
Sample ID:	818655-B3107	Date Analyzed:	11/16/02 08:07
Lab Samp ID:	K106-05	Dilution Factor:	1
Lab File ID:	SK15043A	Matrix :	SOIL
Ext Btch ID:	CPK017S	% Moisture :	18.0
Calib. Ref.:	SK15029A	Instrument ID :	GCT008

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND)|ND	.0024	.00024|.00024
GAMMA-BHC (LINDANE)	(ND)|ND	.0024	.00024|.00024
BETA-BHC	(ND)|ND	.0024	.00024|.00024
HEPTACHLOR	(ND)|ND	.0024	.0012|.0012
DELTA-BHC	(ND)|ND	.0024	.00024|.00024
ALDRIN	(ND)|ND	.0024	.00061|.00061
HEPTACHLOR EPOXIDE	(ND)|ND	.0024	.00024|.00024
GAMMA-CHLORDANE	(ND)|ND	.0024	.00024|.00024
ALPHA-CHLORDANE	(ND)|ND	.0024	.00024|.00024
ENDOSULFAN I	(ND)|ND	.0049	.0012|.0012
4,4'-DDE	(ND)|ND	.0049	.0012|.0012
DIELDRIN	(ND)|ND	.0049	.00061|.00061
ENDRIN	(ND)|ND	.0037	.0012|.0012
4,4'-DDD	(ND)|ND	.0049	.0012|.0012
ENDOSULFAN II	(ND)|ND	.0049	.00061|.00061
4,4'-DDT	(ND)|ND	.0049	.0012|.0012
ENDRIN ALDEHYDE	(ND)|ND	.0049	.00061|.00061
ENDOSULFAN SULFATE	(ND)|ND	.0049	.00061|.00061
ENDRIN KETONE	(ND)|ND	.0037	.0012|.0012
METHOXYCHLOR	(ND)|ND	.024	.0049|.0049
TOXAPHENE	(ND)|ND	.12	.0098|.0098

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	55|(58)	35-135
DECACHLOROBIPHENYL	(87)|87	25-143

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column

SW3520C/8081A
PESTICIDES

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/14/02
Batch No.	: 02K106	Date Extracted:	11/14/02 13:30
Sample ID:	MBLK1W	Date Analyzed:	11/16/02 00:08
Lab Samp ID:	CPK016WB	Dilution Factor:	1
Lab File ID:	SK15024A	Matrix :	WATER
Ext Btch ID:	CPK016W	% Moisture :	NA
Calib. Ref.:	SK15003A	Instrument ID :	GCT008

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
ALPHA-BHC	(ND)|ND	.1	.01|.01
GAMMA-BHC (LINDANE)	(ND)|ND	.1	.01|.01
BETA-BHC	(ND)|ND	.1	.01|.01
HEPTACHLOR	(ND)|ND	.1	.01|.01
DELTA-BHC	(ND)|ND	.1	.01|.01
ALDRIN	(ND)|ND	.1	.01|.01
HEPTACHLOR EPOXIDE	(ND)|ND	.1	.01|.01
GAMMA-CHLORDANE	(ND)|ND	.1	.01|.01
ALPHA-CHLORDANE	(ND)|ND	.1	.01|.01
ENDOSULFAN I	(ND)|ND	.1	.03|.03
4,4'-DDE	(ND)|ND	.2	.03|.03
DIELDRIN	(ND)|ND	.2	.1|.1
ENDRIN	(ND)|ND	.1	.01|.01
4,4'-DDD	(ND)|ND	.2	.03|.03
ENDOSULFAN II	(ND)|ND	.2	.01|.01
4,4'-DDT	(ND)|ND	.2	.02|.02
ENDRIN ALDEHYDE	(ND)|ND	.2	.01|.01
ENDOSULFAN SULFATE	(ND)|ND	.2	.01|.01
ENDRIN KETONE	(ND)|ND	.1	.01|.01
METHOXYCHLOR	(ND)|ND	1	.1|.1
TOXAPHENE	(ND)|ND	3	1.2|1.2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(87)|84	45-125
DECACHLOROBIPHENYL	(105)|102	34-133

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW3520C/8081A

MATRIX: WATER
% MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID:	MBLK1W		
LAB SAMP ID:	CPK016WB	CPK016WL	CPK016WC
LAB FILE ID:	SK15024A	SK15025A	SK15026A
DATE EXTRACTED:	11/14/0213:30	11/14/0213:30	11/14/0213:30
DATE ANALYZED:	11/16/0200:08	11/16/0200:33	11/16/0200:58
PREP. BATCH:	CPK016W	CPK016W	CPK016W
CALIB. REF:	SK15003A	SK15003A	SK15003A

DATE COLLECTED: NA
DATE RECEIVED: 11/14/02

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)		SPIKE AMT (ug/L)	BS RSLT (ug/L)		BS % REC		SPIKE AMT (ug/L)	BSD RSLT (ug/L)		BSD % REC		RPD (%)		QC LIMIT (%)	MAX RPD (%)
alpha-BHC	(ND)	ND	.2	(.162)	.149	(81)	74*	.2	(.165)	.151	(82)	75	(2)	1	75-125	30
gamma-BHC (Lindane)	(ND)	ND	.2	(.171)	.159	(86)	79	.2	(.173)	.162	(86)	81	(1)	2	73-125	30
beta-BHC	(ND)	ND	.2	.183	(.184)	92	(92)	.2	(.187)	.186	(94)	93	(2)	1	51-125	30
Heptachlor	(ND)	ND	.2	.183	(.184)	92	(92)	.2	.185	(.19)	92	(95)	1	(3)	45-128	30
delta-BHC	(ND)	ND	.2	(.19)	.152	(95)	76	.2	(.194)	.149	(97)	74*	(2)	2	75-126	30
Aldrin	(ND)	ND	.2	(.187)	.171	(94)	86	.2	(.191)	.174	(96)	87	(2)	2	47-125	30
Heptachlor Epoxide	(ND)	ND	.2	(.192)	.173	(96)	86	.2	(.194)	.175	(97)	88	(1)	1	53-134	30
gamma-Chlordane	(ND)	ND	.2	(.19)	.181	(95)	90	.2	(.193)	.183	(96)	92	(2)	1	41-125	30
alpha-Chlordane	(ND)	ND	.2	(.197)	.181	(98)	90	.2	(.2)	.186	(100)	93	(2)	3	41-125	30
Endosulfan I	(ND)	ND	.2	(.255)	.187	(127)	94	.2	(.268)	.188	(134)	94	(5)	1	49-143	30
4,4'-DDE	(ND)	ND	.4	.373	(.387)	93	(97)	.4	.37	(.394)	92	(98)	1	(2)	45-139	30
Dieldrin	(ND)	ND	.4	(.369)	.346	(92)	86	.4	(.375)	.352	(94)	88	(2)	2	42-132	30
Endrin	(ND)	ND	.4	(.331)	.308	(83)	77	.4	(.337)	.311	(84)	78	(2)	1	43-134	30
4,4'-DDD	(ND)	ND	.4	(.42)	.383	(105)	96	.4	(.428)	.392	(107)	98	(2)	2	48-136	30
Endosulfan II	(ND)	ND	.4	(.427)	.401	(107)	100	.4	(.434)	.407	(108)	102	(2)	1	75-159	30
4,4'-DDT	(ND)	ND	.4	(.433)	.365	(108)	91	.4	(.439)	.373	(110)	93	(1)	2	34-143	30
Endrin Aldehyde	(ND)	ND	.4	(.459)	.416	(115)	104	.4	(.468)	.422	(117)	105	(2)	1	75-150	30
Endosulfan Sulfate	(ND)	ND	.4	(.428)	.385	(107)	96	.4	(.431)	.384	(108)	96	(1)	0	46-141	30
Endrin Ketone	(ND)	ND	.4	(.473)	.434	(118)	108	.4	(.481)	.44	(120)	110	(2)	1	75-150	30
Methoxychlor	(ND)	ND	2	(2.22)	2.01	(111)	100	2	(2.25)	2.03	(112)	102	(1)	1	73-142	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)		BS % REC		SPIKE AMT (ug/L)	BSD RSLT (ug/L)		BSD % REC		QC LIMIT (%)
Tetrachloro-m-xylene	.4	(.311)	.296	(77)	74	.4	(.314)	.299	(78)	74	45-125
Decachlorobiphenyl	.8	(.736)	.658	(92)	82	.8	(.743)	.664	(93)	83	34-133

5073

SW3550B/8081A
PESTICIDES

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/14/02
Batch No.	: 02K106	Date Extracted:	11/14/02 16:00
Sample ID:	MBLK1S	Date Analyzed:	11/16/02 06:52
Lab Samp ID:	CPK017SB	Dilution Factor:	1
Lab File ID:	SK15040A	Matrix :	SOIL
Ext Btch ID:	CPK017S	% Moisture :	NA
Calib. Ref.:	SK15029A	Instrument ID :	GCT008

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
ALPHA-BHC	(ND) | ND	.002	.0002 | .0002
GAMMA-BHC (LINDANE)	(ND) | ND	.002	.0002 | .0002
BETA-BHC	(ND) | ND	.002	.0002 | .0002
HEPTACHLOR	(ND) | ND	.002	.001 | .001
DELTA-BHC	(ND) | ND	.002	.0002 | .0002
ALDRIN	(ND) | ND	.002	.0005 | .0005
HEPTACHLOR EPOXIDE	(ND) | ND	.002	.0002 | .0002
GAMMA-CHLORDANE	(ND) | ND	.002	.0002 | .0002
ALPHA-CHLORDANE	(ND) | ND	.002	.0002 | .0002
ENDOSULFAN I	(ND) | ND	.004	.001 | .001
4,4'-DDE	(ND) | ND	.004	.001 | .001
DIELDRIN	(ND) | ND	.004	.0005 | .0005
ENDRIN	(ND) | ND	.003	.001 | .001
4,4'-DDD	(ND) | ND	.004	.001 | .001
ENDOSULFAN II	(ND) | ND	.004	.0005 | .0005
4,4'-DDT	(ND) | ND	.004	.001 | .001
ENDRIN ALDEHYDE	(ND) | ND	.004	.0005 | .0005
ENDOSULFAN SULFATE	(ND) | ND	.004	.0005 | .0005
ENDRIN KETONE	(ND) | ND	.003	.001 | .001
METHOXYCHLOR	(ND) | ND	.02	.004 | .004
TOXAPHENE	(ND) | ND	.1	.008 | .008

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(77) | 77	35-135
DECACHLOROBIPHENYL	(95) | 93	25-143

RL : Reporting limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW3550B/8081A

MATRIX: SOIL % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MBLK1S
LAB SAMP ID: CPK017SB CPK017SL
LAB FILE ID: SK15040A SK15041A
DATE EXTRACTED: 11/14/0216:00 11/14/0216:00 DATE COLLECTED: NA
DATE ANALYZED: 11/16/0206:52 11/16/0207:17 DATE RECEIVED: 11/14/02
PREP. BATCH: CPK017S CPK017S
CALIB. REF: SK15029A SK15029A

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
alpha-BHC	(ND)|ND	.00667	(.00451)|.00449	(68)|67	65-135
gamma-BHC (Lindane)	(ND)|ND	.00667	(.00501)|.00476	(75)|71	63-130
beta-BHC	(ND)|ND	.00667	(.00555)|.00533	(83)|80	41-133
Heptachlor	(ND)|ND	.00667	(.00517)|.00495	(78)|74	35-138
delta-BHC	(ND)|ND	.00667	(.00557)|.00512	(84)|77	65-136
Aldrin	(ND)|ND	.00667	(.00554)|.00516	(83)|77	37-126
Heptachlor Epoxide	(ND)|ND	.00667	(.00572)|.00536	(86)|80	43-144
gamma-Chlordane	(ND)|ND	.00667	.00567|(.0057)	85|(85)	31-133
alpha-Chlordane	(ND)|ND	.00667	(.00588)|.00571	(88)|86	31-135
Endosulfan I	(ND)|ND	.00667	(.0068)|.00583	(102)|87	39-153
4,4'-DDE	(ND)|ND	.0133	.0123|(.0124)	92|(93)	35-149
Dieldrin	(ND)|ND	.0133	(.011)|.0109	(83)|82	32-142
Endrin	(ND)|ND	.0133	(.00918)|.00907	(69)|68	33-144
4,4'-DDD	(ND)|ND	.0133	(.0129)|.0124	(97)|93	38-146
Endosulfan II	(ND)|ND	.0133	(.0131)|.0127	(98)|95	65-169
4,4'-DDT	(ND)|ND	.0133	(.0127)|.0111	(95)|83	25-153
Endrin Aldehyde	(ND)|ND	.0133	(.0145)|.0136	(109)|102	65-160
Endosulfan Sulfate	(ND)|ND	.0133	(.0133)|.0125	(100)|94	36-151
Endrin Ketone	(ND)|ND	.0133	(.0145)|.0139	(109)|104	65-160
Methoxychlor	(ND)|ND	.0667	(.0671)|.0619	(101)|93	63-152

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Tetrachloro-m-xylene	.0133	(.00937)|.00923	(70)|69	35-135
Decachlorobiphenyl	.0266	(.024)|.0221	(90)|83	25-143

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW3550B/8081A

MATRIX: SOIL % MOISTURE: 11.4

DILUTION FACTOR:	1	1	
SAMPLE ID:	818655-B3114		
LAB SAMP ID:	K106-11	K106-11M	K106-11S
LAB FILE ID:	SK15045A	SK15046A	SK15047A
DATE EXTRACTED:	11/14/0216:00	11/14/0216:00	11/14/0216:00
DATE ANALYZED:	11/16/0208:58	11/16/0209:23	11/16/0209:48
PREP. BATCH:	CPK017S	CPK017S	CPK017S
CALIB. REF:	SK15029A	SK15029A	SK15029A

DATE COLLECTED: 11/12/02
DATE RECEIVED: 11/12/02

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)		SPIKE AMT (mg/kg)	MS RSLT (mg/kg)		MS % REC		SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)		MSD % REC		RPD (%)		QC LIMIT (%)	MAX RPD (%)
alpha-BHC	(ND)	ND	.00753	(.00337)	.00328	(45*)	44*	.00753	.00592	(.00624)	79	(83)	55*	(62*)	65-135	50
gamma-BHC (Lindane)	(ND)	ND	.00753	.00386	(.00396)	51*	(53*)	.00753	.00573	(.00624)	76	(83)	39	(45)	63-130	50
beta-BHC	(ND)	.0017J	.00753	.00707	(.00782)	94	(81)	.00753	.00627	(.00665)	83	(66)	12	(16)	41-133	50
Heptachlor	.0016J	(ND)	.00753	.0057	(.00721)	54	(96)	.00753	.00601	(.007)	59	(93)	5	(3)	35-138	50
delta-BHC	(ND)	.00034J	.00753	.00469	(.00595)	62*	(75)	.00753	(.00662)	.00586	(88)	73	(34)	2	65-136	50
Aldrin	(ND)	ND	.00753	.00355	(.00689)	47	(92)	.00753	.00673	(.00714)	89	(95)	62*	(4)	37-126	50
Heptachlor Epoxide	(ND)	ND	.00753	.00354	(.00493)	47	(65)	.00753	(.0064)	.00637	(85)	85	58*	(25)	43-144	50
gamma-Chlordane	(ND)	ND	.00753	.00359	(.00454)	48	(60)	.00753	.00635	(.00647)	84	(86)	56*	(35)	31-133	50
alpha-Chlordane	(ND)	ND	.00753	.00357	(.00362)	47	(48)	.00753	(.00651)	.00649	(86)	86	(58*)	57*	31-135	50
Endosulfan I	(ND)	ND	.00753	.00316J	(.00366J)	42	(49)	.00753	.00617	(.00671)	82	(89)	65*	(59*)	39-153	50
4,4'-DDE	(ND)	ND	.015	(.00868)	.00769	(58)	51	.015	(.0148)	.014	(98)	93	(52*)	58*	35-149	50
Dieldrin	(ND)	ND	.015	.00596	(.00706)	40	(47)	.015	.0119	(.0123)	79	(82)	67*	(54*)	32-142	50
Endrin	(ND)	ND	.015	(.00629)	.00606	(42)	40	.015	.0103	(.0107)	68	(71)	(48)	55*	33-144	50
4,4'-DDD	(ND)	ND	.015	(.0107)	.00743	(71)	49	.015	.0138	(.014)	92	(93)	(25)	61*	38-146	50
Endosulfan II	(ND)	ND	.015	(.00932)	.00774	(62*)	51*	.015	.0135	(.0138)	90	(92)	(37)	56*	65-169	50
4,4'-DDT	(ND)	ND	.015	.00939	(.0133)	62	(88)	.015	(.0138)	.0127	(92)	84	(38)	5	25-153	50
Endrin Aldehyde	(ND)	ND	.015	.00903	(.0137)	60*	(91)	.015	(.0148)	.0148	(98)	98	(48)	8	65-160	50
Endosulfan Sulfate	(ND)	ND	.015	(.0168)	.00959	(112)	64	.015	(.0149)	.0145	(99)	96	(12)	41	36-151	50
Endrin Ketone	(ND)	ND	.015	(.0118)	.008	(78)	53*	.015	(.015)	.015	(100)	100	(24)	61*	65-160	50
Methoxychlor	(ND)	ND	.0752	(.0431)	.0417	(57*)	55*	.0752	(.074)	.0714	(98)	95	(53*)	53*	63-152	50

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)		MS % REC		SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)		MSD % REC		QC LIMIT (%)
Tetrachloro-m-xylene	.015	.00991	(.0103)	66	(68)	.015	.0117	(.0119)	78	(79)	35-135
Decachlorobiphenyl	.030	(.0195)	.0195	(65)	65	.030	(.0259)	.0244	(86)	81	25-143

5076

SW3520C/8082
PCBs

Client	E&I	Date Collected:	11/12/02
Project	ORO, CTO 0024	Date Received:	11/12/02
Batch No.	106	Date Extracted:	11/14/02 13:30
Sample I	8655-B3111	Date Analyzed:	11/16/02 04:46
Lab Samp I	106-09	Dilution Factor:	.94
Lab File	SK15035A	Matrix :	WATER
Ext Btch	CPK016W	% Moisture :	NA
Calib. R	SK15032A	Instrument ID :	GCT008

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
PCB-1016	(ND)|ND	.94	.24|.24
PCB-1221	(ND)|ND	.94	.24|.24
PCB-1232	(ND)|ND	.94	.24|.24
PCB-1242	(ND)|ND	.94	.24|.24
PCB-1248	(ND)|ND	.94	.24|.24
PCB-1254	(ND)|ND	.94	.24|.24
PCB-1260	(ND)|ND	.94	.24|.24

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	69|(70)	45-125
DECACHLOROBIPHENYL	(119)|109	34-133

RL: Reporting Limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column
* Out side of QC Limit

SW3520C/8082
PCBs

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/14/02
Batch No.	: 02K106	Date Extracted:	11/14/02 13:30
Sample ID:	MBLK1W	Date Analyzed:	11/16/02 00:08
Lab Samp ID:	CPK016WB	Dilution Factor:	1
Lab File ID:	SK15024A	Matrix :	WATER
Ext Btch ID:	CPK016W	% Moisture :	NA
Calib. Ref.:	SK15006A	Instrument ID :	GCT008

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
PCB-1016	(ND)|ND	1	.25|.25
PCB-1221	(ND)|ND	1	.25|.25
PCB-1232	(ND)|ND	1	.25|.25
PCB-1242	(ND)|ND	1	.25|.25
PCB-1248	(ND)|ND	1	.25|.25
PCB-1254	(ND)|ND	1	.25|.25
PCB-1260	(ND)|ND	1	.25|.25

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	(94)|91	45-125
DECACHLOROBIPHENYL	(117)|106	34-133

RL: Reporting Limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column
* Out side of QC Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW3520C/8082

MATRIX: WATER
% MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID:	MBLK1W		
LAB SAMP ID:	CPK016WB	60K016WL	60K016WC
LAB FILE ID:	SK15024A	SK15033A	SK15034A
DATE EXTRACTED:	11/14/0213:30	11/14/0213:30	11/14/0213:30
DATE ANALYZED:	11/16/0200:08	11/16/0203:55	11/16/0204:20
PREP. BATCH:	CPK016W	CPK016W	CPK016W
CALIB. REF:	SK15006A	SK15032A	SK15032A

DATE COLLECTED: NA
DATE RECEIVED: 11/14/02

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
PCB-1016	(ND)|ND	5	(4.9)|4.67	(98)|93	5	(4.95)|4.83	(99)|97	(1)|3	54-143	30
PCB-1260	(ND)|ND	5	(5.86)|5.12	(117)|102	5	(5.95)|5.22	(119)|104	(2)|2	63-154	30

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
Tetrachloro-m-xylene	.2	(.209)|.192	(104)|96	.2	(.212)|.195	(106)|98	45-125
Decachlorobiphenyl	.2	(.241)|.22	(120)|110	.2	(.242)|.221	(121)|111	34-133

SW3550B/8082
PCBs

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/14/02
Batch No.	: 02K106	Date Extracted:	11/14/02 16:00
Sample ID:	MBLK1S	Date Analyzed:	11/16/02 06:52
Lab Samp ID:	CPK017SB	Dilution Factor:	1
Lab File ID:	SK15040A	Matrix :	SOIL
Ext Btch ID:	CPK017S	% Moisture :	NA
Calib. Ref.:	SK15032A	Instrument ID :	GCT008

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
PCB-1016	(ND) | ND	.05	.017 | .017
PCB-1221	(ND) | ND	.05	.017 | .017
PCB-1232	(ND) | ND	.05	.017 | .017
PCB-1242	(ND) | ND	.05	.017 | .017
PCB-1248	(ND) | ND	.05	.017 | .017
PCB-1254	(ND) | ND	.05	.017 | .017
PCB-1260	(ND) | ND	.05	.017 | .017

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TETRACHLORO-M-XYLENE	83 | (84)	35-135
DECACHLOROBIPHENYL	(105) | 97	25-143

RL: Reporting Limit
Left of | is related to first column ; Right of | related to second column
( ) included the reported column
* Out side of QC Limit

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW3550B/8082

MATRIX: SOIL % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MBLK1S
LAB SAMP ID: CPK017SB 60K017SL
LAB FILE ID: SK15040A SK15042A
DATE EXTRACTED: 11/14/0216:00 11/14/0216:00 DATE COLLECTED: NA
DATE ANALYZED: 11/16/0206:52 11/16/0207:42 DATE RECEIVED: 11/14/02
PREP. BATCH: CPK017S CPK017S
CALIB. REF: SK15032A SK15032A

ACCESSION:

PARAMETER	BLNK RSLT (mg/kg)	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
PCB-1016	(ND)|ND	.167	(.182)|.153	(109)|92	27-165
PCB-1260	(ND)|ND	.167	(.19)|.172	(114)|103	36-176

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	BS RSLT (mg/kg)	BS % REC	QC LIMIT (%)
Tetrachloro-m-xylene	.0133	(.0125)|.0125	93|(94)	35-135
Decachlorobiphenyl	.0133	(.0151)|.0135	(113)|101	25-143

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW3550B/8082

MATRIX: SOIL % MOISTURE: 11.4

DILUTION FACTOR:	1	1	1		
SAMPLE ID:	818655-B3114				
LAB SAMP ID:	K106-11	K106-11M	K106-11S		
LAB FILE ID:	SK15045A	SK15048A	SK15049A		
DATE EXTRACTED:	11/14/0216:00	11/14/0216:00	11/14/0216:00	DATE COLLECTED:	11/12/02
DATE ANALYZED:	11/16/0208:58	11/16/0210:13	11/16/0210:39	DATE RECEIVED:	11/12/02
PREP. BATCH:	CPK017S	CPK017S	CPK017S		
CALIB. REF:	SK15032A	SK15032A	SK15032A		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
PCB-1016	(ND)|ND	.188	.127|(.134)	67|(71)	.188	(.163)|.16	(87)|85	(25)|18	27-165	50
PCB-1260	(ND)|ND	.188	(.164)|.136	(87)|72	.188	(.196)|.179	(104)|95	(18)|27	36-176	50

SURROGATE PARAMETER	SPIKE AMT (mg/kg)	MS RSLT (mg/kg)	MS % REC	SPIKE AMT (mg/kg)	MSD RSLT (mg/kg)	MSD % REC	QC LIMIT (%)
Tetrachloro-m-xylene	.015	.0135|(.0142)	89|(95)	.015	.0124|(.0133)	83|(88)	35-135
Decachlorobiphenyl	.015	(.023)|.0207	153*|(138)	.015	(.0163)|.015	(108)|99	25-143

* : Outside of QC limits

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/16/02 20:03
Sample ID:	818655-B3105	Date Analyzed:	11/16/02 20:03
Lab Samp ID:	K106-03	Dilution Factor:	1
Lab File ID:	RKW353	Matrix :	WATER
Ext Btch ID:	V006K38	% Moisture :	NA
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYLVINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE,TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	113	86-118
BROMOFLUOROBENZENE	93	86-115
TOLUENE-D8	102	88-110

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/16/02 20:39
Sample ID	: 818655-B3111	Date Analyzed:	11/16/02 20:39
Lab Samp ID	: K106-09	Dilution Factor:	1
Lab File ID	: RKW354	Matrix	: WATER
Ext Btch ID	: V006K38	% Moisture	: NA
Calib. Ref.	: RKW094	Instrument ID	: T-006

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYLVINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE,TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	111	86-118
BROMOFLUOROBENZENE	98	86-115
TOLUENE-D8	102	88-110

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/18/02 15:34
Sample ID:	818655-B3106	Date Analyzed:	11/18/02 15:34
Lab Samp ID:	K106-04	Dilution Factor:	.93
Lab File ID:	RKW373	Matrix :	SOIL
Ext Btch ID:	V006K40	% Moisture :	21.1
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.9	2.4
1,1,2,2-TETRACHLOROETHANE	ND	5.9	2.4
1,1,2-TRICHLOROETHANE	ND	5.9	2.4
1,1-DICHLOROETHANE	ND	5.9	2.4
1,1-DICHLOROETHENE	ND	5.9	2.4
1,2-DICHLOROETHANE	ND	5.9	2.4
1,2-DICHLOROPROPANE	ND	5.9	2.4
2-BUTANONE (MEK)	ND	59	5.9
2-HEXANONE	ND	59	5.9
2-CHLOROETHYLVINYLETHER	ND	59	2.4
4-METHYL-2-PENTANONE (MIBK)	ND	59	5.9
ACETONE	ND	59	5.9
BENZENE	ND	5.9	2.4
BROMODICHLOROMETHANE	ND	5.9	2.4
BROMOFORM	ND	5.9	2.4
BROMOMETHANE	ND	5.9	3.5
CARBON DISULFIDE	ND	5.9	2.4
CARBON TETRACHLORIDE	ND	5.9	2.4
CHLOROBENZENE	ND	5.9	2.4
CHLOROETHANE	ND	5.9	3.5
CHLOROFORM	ND	5.9	2.4
CHLOROMETHANE	ND	5.9	5.9
CIS-1,2-DICHLOROETHENE	ND	5.9	2.4
CIS-1,3-DICHLOROPROPENE	ND	5.9	2.4
DIBROMOCHLOROMETHANE	ND	5.9	2.4
ETHYLBENZENE	ND	5.9	2.4
XYLENE,TOTAL	ND	5.9	3.5
METHYLENE CHLORIDE	ND	5.9	2.4
MTBE	ND	12	2.4
STYRENE	ND	5.9	2.4
TOLUENE	ND	5.9	2.4
TRANS-1,2-DICHLOROETHENE	ND	5.9	2.4
TRANS-1,3-DICHLOROPROPENE	ND	5.9	2.4
TRICHLOROETHENE	ND	5.9	2.4
TETRACHLOROETHENE	ND	5.9	2.4
VINYL ACETATE	ND	59	2.4
VINYL CHLORIDE	ND	5.9	2.4

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	124	70-130
BROMOFLUOROBENZENE	93	70-130
TOLUENE-D8	96	70-130

Preservation Date: 11/13/02 16:25

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/18/02 16:10
Sample ID:	818655-B3107	Date Analyzed:	11/18/02 16:10
Lab Samp ID:	K106-05	Dilution Factor:	.88
Lab File ID:	RKW374	Matrix :	SOIL
Ext Btch ID:	V006K40	% Moisture :	18.0
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5.4	2.1
1,1,2,2-TETRACHLOROETHANE	ND	5.4	2.1
1,1,2-TRICHLOROETHANE	ND	5.4	2.1
1,1-DICHLOROETHANE	ND	5.4	2.1
1,1-DICHLOROETHENE	ND	5.4	2.1
1,2-DICHLOROETHANE	ND	5.4	2.1
1,2-DICHLOROPROPANE	ND	5.4	2.1
2-BUTANONE (MEK)	ND	54	5.4
2-HEXANONE	ND	54	5.4
2-CHLOROETHYLVINYLETHER	ND	54	2.1
4-METHYL-2-PENTANONE (MIBK)	ND	54	5.4
ACETONE	ND	54	5.4
BENZENE	ND	5.4	2.1
BROMODICHLOROMETHANE	ND	5.4	2.1
BROMOFORM	ND	5.4	2.1
BROMOMETHANE	ND	5.4	3.2
CARBON DISULFIDE	ND	5.4	2.1
CARBON TETRACHLORIDE	ND	5.4	2.1
CHLOROBENZENE	ND	5.4	2.1
CHLOROETHANE	ND	5.4	3.2
CHLOROFORM	ND	5.4	2.1
CHLOROMETHANE	ND	5.4	5.4
CIS-1,2-DICHLOROETHENE	ND	5.4	2.1
CIS-1,3-DICHLOROPROPENE	ND	5.4	2.1
DIBROMOCHLOROMETHANE	ND	5.4	2.1
ETHYLBENZENE	ND	5.4	2.1
XYLENE,TOTAL	ND	5.4	3.2
METHYLENE CHLORIDE	ND	5.4	2.1
MTBE	ND	11	2.1
STYRENE	ND	5.4	2.1
TOLUENE	ND	5.4	2.1
TRANS-1,2-DICHLOROETHENE	ND	5.4	2.1
TRANS-1,3-DICHLOROPROPENE	ND	5.4	2.1
TRICHLOROETHENE	ND	5.4	2.1
TETRACHLOROETHENE	ND	5.4	2.1
VINYL ACETATE	ND	54	2.1
VINYL CHLORIDE	ND	5.4	2.1

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-130
BROMOFLUOROBENZENE	98	70-130
TOLUENE-D8	99	70-130

Preservation Date: 11/13/02 16:25

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/16/02
Batch No.	: 02K106	Date Extracted:	11/16/02 18:15
Sample ID:	MBLK1W	Date Analyzed:	11/16/02 18:15
Lab Samp ID:	V006K38Q	Dilution Factor:	1
Lab File ID:	RKW350	Matrix :	WATER
Ext Btch ID:	V006K38	% Moisture :	NA
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYLVINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE,TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	86-118
BROMOFLUOROBENZENE	89	86-115
TOLUENE-D8	100	88-110

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/16/02
Batch No.	: 02K106	Date Extracted:	11/16/02 18:15
Sample ID:	MBLK1W	Date Analyzed:	11/16/02 18:15
Lab Samp ID:	V006K38Q	Dilution Factor:	1
Lab File ID:	RKW350	Matrix :	WATER
Ext Btch ID:	V006K38	% Moisture :	NA
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYLVINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	2
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	2.5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE,TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	86-118
BROMOFLUOROBENZENE	89	86-115
TOLUENE-D8	100	88-110

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW 5030B/8260B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	V006K38Q	V006K38L	V006K38C		
LAB FILE ID:	RKW350	RKW347	RKW348		
DATE EXTRACTED:	11/16/0218:15	11/16/0216:27	11/16/0217:02	DATE COLLECTED:	NA
DATE ANALYZED:	11/16/0218:15	11/16/0216:27	11/16/0217:02	DATE RECEIVED:	11/16/02
PREP. BATCH:	V006K38	V006K38	V006K38		
CALIB. REF:	RKW094	RKW094	RKW094		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	20	22.1	111	20	20	100	10	75-125	20
Benzene	ND	20	21	105	20	19.1	95	10	75-125	20
Chlorobenzene	ND	20	22.3	112	20	20.1	101	10	75-125	20
Toluene	ND	20	21.2	106	20	19.5	97	9	74-125	20
Trichloroethene	ND	20	21	105	20	19.8	99	6	71-125	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	50	54.3	109	50	51.3	103	86-118
Bromofluorobenzene	50	46.1	92	50	45.4	91	86-115
Toluene-d8	50	48.4	97	50	50.3	101	88-110

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/18/02
Batch No.	: 02K106	Date Extracted:	11/18/02 14:20
Sample ID:	MBLK1S	Date Analyzed:	11/18/02 14:20
Lab Samp ID:	V006K40B	Dilution Factor:	1
Lab File ID:	RKW371	Matrix :	SOIL
Ext Btch ID:	V006K40	% Moisture :	NA
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYLVINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	3
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE,TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-130
BROMOFLUOROBENZENE	92	70-130
TOLUENE-D8	96	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW 5035/8260B

MATRIX: SOIL % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID:	MBLK1S		
LAB SAMP ID:	V006K40B	V006K40L	V006K40C
LAB FILE ID:	RKW371	RKW369	RKW370
DATE EXTRACTED:	11/18/0214:20	11/18/0213:08	11/18/0213:44
DATE ANALYZED:	11/18/0214:20	11/18/0213:08	11/18/0213:44
PREP. BATCH:	V006K40	V006K40	V006K40
CALIB. REF:	RKW094	RKW094	RKW094

DATE COLLECTED: NA
DATE RECEIVED: 11/18/02

ACCESSION:

PARAMETER	BLNK RSLT (ug/kg)	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	SPIKE AMT (ug/kg)	BSD RSLT (ug/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,1-Dichloroethene	ND	20	23.2	116	20	22.1	110	5	65-135	30
Benzene	ND	20	22.5	113	20	20.9	104	8	65-135	30
Chlorobenzene	ND	20	23.8	119	20	22.4	112	6	65-135	30
Toluene	ND	20	22.6	113	20	22.2	111	2	64-135	30
Trichloroethene	ND	20	23.5	118	20	21.7	109	8	61-135	30

SURROGATE PARAMETER	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	SPIKE AMT (ug/kg)	BSD RSLT (ug/kg)	BSD % REC	QC LIMIT (%)
1,2-Dichloroethane-d4	50	57.9	116	50	61	122	70-130
Bromofluorobenzene	50	45.7	91	50	46.6	93	70-130
Toluene-d8	50	46.5	93	50	46.3	93	70-130

SW 5035/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/18/02
Batch No.	: 02K106	Date Extracted:	11/18/02 14:56
Sample ID:	MBLK2S	Date Analyzed:	11/18/02 14:56
Lab Samp ID:	VPK009SB	Dilution Factor:	1.0
Lab File ID:	RKW372	Matrix :	SOIL
Ext Btch ID:	V006K40	% Moisture :	NA
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYLVINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	3
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE,TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	115	70-130
BROMOFLUOROBENZENE	92	70-130
TOLUENE-D8	98	70-130

Preservation Date: 11/13/02 16:25

SW 5030B/8260B
VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/19/02
Batch No.	: 02K106	Date Extracted:	11/19/02 04:08
Sample ID:	MBLK3S	Date Analyzed:	11/19/02 04:08
Lab Samp ID:	V006K42B	Dilution Factor:	1
Lab File ID:	RKW391	Matrix :	SOIL
Ext Btch ID:	V006K42	% Moisture :	NA
Calib. Ref.:	RKW094	Instrument ID :	T-006

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,1,1-TRICHLOROETHANE	ND	5	2
1,1,2,2-TETRACHLOROETHANE	ND	5	2
1,1,2-TRICHLOROETHANE	ND	5	2
1,1-DICHLOROETHANE	ND	5	2
1,1-DICHLOROETHENE	ND	5	2
1,2-DICHLOROETHANE	ND	5	2
1,2-DICHLOROPROPANE	ND	5	2
2-BUTANONE (MEK)	ND	50	5
2-HEXANONE	ND	50	5
2-CHLOROETHYLVINYLETHER	ND	50	2
4-METHYL-2-PENTANONE (MIBK)	ND	50	5
ACETONE	ND	50	5
BENZENE	ND	5	2
BROMODICHLOROMETHANE	ND	5	2
BROMOFORM	ND	5	2
BROMOMETHANE	ND	5	3
CARBON DISULFIDE	ND	5	2
CARBON TETRACHLORIDE	ND	5	2
CHLOROBENZENE	ND	5	2
CHLOROETHANE	ND	5	3
CHLOROFORM	ND	5	2
CHLOROMETHANE	ND	5	5
CIS-1,2-DICHLOROETHENE	ND	5	2
CIS-1,3-DICHLOROPROPENE	ND	5	2
DIBROMOCHLOROMETHANE	ND	5	2
ETHYLBENZENE	ND	5	2
XYLENE,TOTAL	ND	5	3
METHYLENE CHLORIDE	ND	5	2
MTBE	ND	10	2
STYRENE	ND	5	2
TOLUENE	ND	5	2
TRANS-1,2-DICHLOROETHENE	ND	5	2
TRANS-1,3-DICHLOROPROPENE	ND	5	2
TRICHLOROETHENE	ND	5	2
TETRACHLOROETHENE	ND	5	2
VINYL ACETATE	ND	50	2
VINYL CHLORIDE	ND	5	2

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
1,2-DICHLOROETHANE-D4	118	70-130
BROMOFLUOROBENZENE	95	70-130
TOLUENE-D8	95	70-130

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

:LIENT: SHAW E&I
'ROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW 5030B/8260B

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MATRIX:	SOIL			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
'AMPLE ID:	MBLK3S				
AB SAMP ID:	V006K42B	V006K42L	V006K42C		
LAB FILE ID:	RKW391	RKW389	RKW390		
DATE EXTRACTED:	11/19/0204:08	11/19/0202:56	11/19/0203:32	DATE COLLECTED:	NA
'ATE ANALYZED:	11/19/0204:08	11/19/0202:56	11/19/0203:32	DATE RECEIVED:	11/19/02
'REP. BATCH:	V006K42	V006K42	V006K42		
CALIB. REF:	RKW094	RKW094	RKW094		

CCESSION:

PARAMETER	BLNK RSLT (ug/kg)	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	SPIKE AMT (ug/kg)	BSD RSLT (ug/kg)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
,1-Dichloroethene	ND	20	17.7	89	20	17.6	88	1	65-135	30
enzene	ND	20	17.6	88	20	18.1	90	3	65-135	30
Chlorobenzene	ND	20	18.8	94	20	19.9	99	6	65-135	30
Toluene	ND	20	18	90	20	18.5	93	3	64-135	30
richloroethene	ND	20	17.3	87	20	18.6	93	7	61-135	30

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SURROGATE PARAMETER	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	SPIKE AMT (ug/kg)	BSD RSLT (ug/kg)	BSD % REC	QC LIMIT (%)
,2-Dichloroethane-d4	50	57.5	115	50	58	116	70-130
romofluorobenzene	50	47.2	94	50	45.9	92	70-130
Toluene-d8	50	46.8	94	50	48.1	96	70-130

SW 3520C/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/15/02 11:00
Sample ID:	818655-B3111	Date Analyzed:	11/16/02 13:18
Lab Samp ID:	K106-09	Dilution Factor:	.94
Lab File ID:	RKX076	Matrix	: WATER
Ext Btch ID:	SVK022W	% Moisture	: NA
Calib. Ref.:	RJX007	Instrument ID	: T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,2,4-TRICHLOROBENZENE	ND	9.4	4.7
1,2-DICHLOROBENZENE	ND	9.4	4.7
1,3-DICHLOROBENZENE	ND	9.4	4.7
1,4-DICHLOROBENZENE	ND	9.4	4.7
2,4,5-TRICHLOROPHENOL	ND	24	4.7
2,4,6-TRICHLOROPHENOL	ND	9.4	4.7
2,4-DICHLOROPHENOL	ND	9.4	4.7
2,4-DIMETHYLPHENOL	ND	9.4	4.7
2,4-DINITROPHENOL	ND	24	9.4
2,4-DINITROTOLUENE	ND	9.4	4.7
2,6-DINITROTOLUENE	ND	9.4	4.7
2-CHLORONAPHTHALENE	ND	9.4	4.7
2-CHLOROPHENOL	ND	9.4	4.7
2-METHYLNAPHTHALENE	ND	9.4	4.7
2-METHYLPHENOL	ND	9.4	4.7
2-NITROANILINE	ND	24	9.4
2-NITROPHENOL	ND	9.4	4.7
3,3'-DICHLOROBENZIDINE	ND	9.4	4.7
3-NITROANILINE	ND	24	4.7
4,6-DINITRO-2-METHYLPHENOL	ND	24	9.4
4-BROMOPHENYL-PHENYL ETHER	ND	9.4	4.7
4-CHLORO-3-METHYLPHENOL	ND	9.4	4.7
4-CHLOROANILINE	ND	9.4	4.7
4-CHLOROPHENYL-PHENYL ETHER	ND	9.4	4.7
4-METHYLPHENOL (1)	ND	9.4	4.7
4-NITROANILINE	ND	24	4.7
4-NITROPHENOL	ND	24	4.7
ACENAPHTHENE	ND	9.4	4.7
ACENAPHTHYLENE	ND	9.4	4.7
ANTHRACENE	ND	9.4	4.7
BENZO(A)ANTHRACENE	ND	9.4	4.7
BENZO(A)PYRENE	ND	9.4	4.7
BENZO(B)FLUORANTHENE	ND	9.4	4.7
BENZO(K)FLUORANTHENE	ND	9.4	4.7
BENZO(G,H,I)PERYLENE	ND	9.4	4.7
BIS(2-CHLOROETHOXY)METHANE	ND	9.4	4.7
BIS(2-CHLOROETHYL)ETHER	ND	9.4	4.7
BIS(2-CHLOROISOPROPYL)ETHER	ND	9.4	4.7
BIS(2-ETHYLHEXYL)PHTHALATE	ND	19	9.4
BUTYLBENZYLPHTHALATE	ND	9.4	4.7
CHRYSENE	ND	9.4	4.7
DI-N-BUTYLPHTHALATE	ND	9.4	4.7
DI-N-OCTYLPHTHALATE	ND	9.4	4.7
DIBENZO(A,H)ANTHRACENE	ND	9.4	4.7
DIBENZOFURAN	ND	9.4	4.7
DIETHYLPHTHALATE	ND	9.4	4.7
DIMETHYLPHTHALATE	ND	9.4	4.7
FLUORANTHENE	ND	9.4	4.7
FLUORENE	ND	9.4	4.7
HEXACHLOROBENZENE	ND	9.4	4.7
HEXACHLOROBUTADIENE	ND	9.4	4.7
HEXACHLOROCYCLOPENTADIENE	ND	9.4	4.7
HEXACHLOROETHANE	ND	9.4	4.7
INDENO(1,2,3-CD)PYRENE	ND	9.4	4.7
N-NITROSO-DI-N-PROPYLAMINE	ND	9.4	4.7
N-NITROSODIPHENYLAMINE (2)	ND	9.4	4.7
NAPHTHALENE	ND	9.4	4.7
NITROBENZENE	ND	9.4	4.7
PENTACHLOROPHENOL	ND	9.4	9.4
PHENANTHRENE	ND	9.4	4.7
PHENOL	ND	9.4	4.7
PYRENE	ND	9.4	4.7

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	109	25-134
2-FLUOROBIPHENYL	86	43-125
2-FLUOROPHENOL	78	25-125
NITROBENZENE-D5	81	32-125
PHENOL-D5	80	25-125
TERPHENYL-D14	103	42-126

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

SW 3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/14/02 15:45
Sample ID:	818655-B3106	Date Analyzed:	11/16/02 17:37
Lab Samp ID:	K106-04	Dilution Factor:	1
Lab File ID:	RKX084	Matrix	: SOIL
Ext Btch ID:	SVK023S	% Moisture	: 21.1
Calib. Ref.:	RJX007	Instrument ID	: T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	420	210
1,2-DICHLOROBENZENE	ND	420	210
1,3-DICHLOROBENZENE	ND	420	210
1,4-DICHLOROBENZENE	ND	420	210
2,4,5-TRICHLOROPHENOL	ND	1100	210
2,4,6-TRICHLOROPHENOL	ND	420	210
2,4-DICHLOROPHENOL	ND	420	210
2,4-DIMETHYLPHENOL	ND	420	210
2,4-DINITROPHENOL	ND	1100	210
2,4-DINITROTOLUENE	ND	420	210
2,6-DINITROTOLUENE	ND	420	210
2-CHLORONAPHTHALENE	ND	420	210
2-CHLOROPHENOL	ND	420	210
2-METHYLNAPHTHALENE	ND	420	210
2-METHYLPHENOL	ND	420	210
2-NITROANILINE	ND	1100	210
2-NITROPHENOL	ND	420	210
3,3'-DICHLOROBENZIDINE	ND	420	210
3-NITROANILINE	ND	1100	210
4,6-DINITRO-2-METHYLPHENOL	ND	1100	210
4-BROMOPHENYL-PHENYL ETHER	ND	420	210
4-CHLORO-3-METHYLPHENOL	ND	420	210
4-CHLOROANILINE	ND	420	210
4-CHLOROPHENYL-PHENYL ETHER	ND	420	210
4-METHYLPHENOL (1)	ND	420	210
4-NITROANILINE	ND	1100	210
4-NITROPHENOL	ND	1100	210
ACENAPHTHENE	ND	420	210
ACENAPHTHYLENE	ND	420	210
ANTHRACENE	ND	420	210
BENZO(A)ANTHRACENE	ND	420	210
BENZO(B)FLUORANTHENE	ND	420	210
BENZO(K)FLUORANTHENE	ND	420	210
BENZO(G,H,I)PERYLENE	ND	420	210
BIS(2-CHLOROETHOXY)METHANE	ND	420	210
BIS(2-CHLOROISOPROPYL)ETHER	ND	420	210
BIS(2-ETHYLHEXYL)PHTHALATE	ND	420	210
BUTYLBENZYLPHTHALATE	ND	420	210
CHRYSENE	ND	420	210
DI-N-BUTYLPHTHALATE	ND	420	210
DI-N-OCTYLPHTHALATE	ND	420	210
DIBENZOFURAN	ND	420	210
DIETHYLPHTHALATE	ND	420	210
DIMETHYLPHTHALATE	ND	420	210
FLUORANTHENE	ND	420	210
FLUORENE	ND	420	210
HEXACHLOROBUTADIENE	ND	420	210
HEXACHLOROCYCLOPENTADIENE	ND	420	210
HEXACHLOROETHANE	ND	420	210
N-NITROSODIPHENYLAMINE (2)	ND	420	210
NAPHTHALENE	ND	420	210
NITROBENZENE	ND	420	210
PENTACHLOROPHENOL	ND	250	210
PHENANTHRENE	ND	420	210
PHENOL	ND	420	210
PYRENE	ND	420	210

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	72	25-144
2-FLUOROBIPHENYL	49	34-135
2-FLUOROPHENOL	44	25-135
NITROBENZENE-D5	41	25-135
PHENOL-D5	47	25-135
TERPHENYL-D14	77	32-136

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

SW 3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/14/02 15:45
Sample ID:	818655-B3107	Date Analyzed:	11/16/02 17:05
Lab Samp ID:	K106-05	Dilution Factor:	1
Lab File ID:	RKX083	Matrix :	SOIL
Ext Btch ID:	SVK023S	% Moisture :	18.0
Calib. Ref.:	RJX007	Instrument ID :	T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	400	200
1,2-DICHLOROBENZENE	ND	400	200
1,3-DICHLOROBENZENE	ND	400	200
1,4-DICHLOROBENZENE	ND	400	200
2,4,5-TRICHLOROPHENOL	ND	1000	200
2,4,6-TRICHLOROPHENOL	ND	400	200
2,4-DICHLOROPHENOL	ND	400	200
2,4-DIMETHYLPHENOL	ND	400	200
2,4-DINITROPHENOL	ND	1000	200
2,4-DINITROTOLUENE	ND	400	200
2,6-DINITROTOLUENE	ND	400	200
2-CHLORONAPHTHALENE	ND	400	200
2-CHLOROPHENOL	ND	400	200
2-METHYLNAPHTHALENE	ND	400	200
2-METHYLPHENOL	ND	400	200
2-NITROANILINE	ND	1000	200
2-NITROPHENOL	ND	400	200
3,3'-DICHLOROBENZIDINE	ND	400	200
3-NITROANILINE	ND	1000	200
4,6-DINITRO-2-METHYLPHENOL	ND	1000	200
4-BROMOPHENYL-PHENYL ETHER	ND	400	200
4-CHLORO-3-METHYLPHENOL	ND	400	200
4-CHLOROANILINE	ND	400	200
4-CHLOROPHENYL-PHENYL ETHER	ND	400	200
4-METHYLPHENOL (1)	ND	400	200
4-NITROANILINE	ND	1000	200
4-NITROPHENOL	ND	1000	200
ACENAPHTHENE	ND	400	200
ACENAPHTHYLENE	ND	400	200
ANTHRACENE	ND	400	200
BENZO(A)ANTHRACENE	ND	400	200
BENZO(B)FLUORANTHENE	ND	400	200
BENZO(K)FLUORANTHENE	ND	400	200
BENZO(G,H,I)PERYLENE	ND	400	200
BIS(2-CHLOROETHOXY)METHANE	ND	400	200
BIS(2-CHLOROISOPROPYL)ETHER	ND	400	200
BIS(2-ETHYLHEXYL)PHTHALATE	ND	400	200
BUTYLBENZYLPHTHALATE	ND	400	200
CHRYSENE	ND	400	200
DI-N-BUTYLPHTHALATE	ND	400	200
DI-N-OCTYLPHTHALATE	ND	400	200
DIBENZOFURAN	ND	400	200
DIETHYLPHTHALATE	ND	400	200
DIMETHYLPHTHALATE	ND	400	200
FLUORANTHENE	ND	400	200
FLUORENE	ND	400	200
HEXACHLOROBUTADIENE	ND	400	200
HEXACHLOROCYCLOPENTADIENE	ND	400	200
HEXACHLOROETHANE	ND	400	200
N-NITROSODIPHENYLAMINE (2)	ND	400	200
NAPHTHALENE	ND	400	200
NITROBENZENE	ND	400	200
PENTACHLOROPHENOL	ND	240	200
PHENANTHRENE	ND	400	200
PHENOL	ND	400	200
PYRENE	ND	400	200

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	98	25-144
2-FLUOROBIPHENYL	84	34-135
2-FLUOROPHENOL	78	25-135
NITROBENZENE-D5	79	25-135
PHENOL-D5	84	25-135
TERPHENYL-D14	88	32-136

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

SW 3520C/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	NA
Batch No.	: 02K106	Date Extracted:	11/15/02 11:00
Sample ID:	MBLK1W	Date Analyzed:	11/16/02 11:41
Lab Samp ID:	SVK022WB	Dilution Factor:	1
Lab File ID:	RKX073	Matrix :	WATER
Ext Btch ID:	SVK022W	% Moisture :	NA
Calib. Ref.:	RJX007	Instrument ID :	T-042

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
1,2,4-TRICHLOROBENZENE	ND	10	5
1,2-DICHLOROBENZENE	ND	10	5
1,3-DICHLOROBENZENE	ND	10	5
1,4-DICHLOROBENZENE	ND	10	5
2,4,5-TRICHLOROPHENOL	ND	25	5
2,4,6-TRICHLOROPHENOL	ND	10	5
2,4-DICHLOROPHENOL	ND	10	5
2,4-DIMETHYLPHENOL	ND	10	5
2,4-DINITROPHENOL	ND	25	10
2,4-DINITROTOLUENE	ND	10	5
2,6-DINITROTOLUENE	ND	10	5
2-CHLORONAPHTHALENE	ND	10	5
2-CHLOROPHENOL	ND	10	5
2-METHYLNAPHTHALENE	ND	10	5
2-METHYLPHENOL	ND	10	5
2-NITROANILINE	ND	25	10
2-NITROPHENOL	ND	10	5
3,3'-DICHLOROBENZIDINE	ND	10	5
3-NITROANILINE	ND	25	5
4,6-DINITRO-2-METHYLPHENOL	ND	25	10
4-BROMOPHENYL-PHENYL ETHER	ND	10	5
4-CHLORO-3-METHYLPHENOL	ND	10	5
4-CHLOROANILINE	ND	10	5
4-CHLOROPHENYL-PHENYL ETHER	ND	10	5
4-METHYLPHENOL (1)	ND	10	5
4-NITROANILINE	ND	25	5
4-NITROPHENOL	ND	25	5
ACENAPHTHENE	ND	10	5
ACENAPHTHYLENE	ND	10	5
ANTHRACENE	ND	10	5
BENZO(A)ANTHRACENE	ND	10	5
BENZO(A)PYRENE	ND	10	5
BENZO(B)FLUORANTHENE	ND	10	5
BENZO(K)FLUORANTHENE	ND	10	5
BENZO(G,H,I)PERYLENE	ND	10	5
BIS(2-CHLOROETHOXY)METHANE	ND	10	5
BIS(2-CHLOROETHYL)ETHER	ND	10	5
BIS(2-CHLOROISOPROPYL)ETHER	ND	10	5
BIS(2-ETHYLHEXYL)PHTHALATE	ND	20	10
BUTYLBENZYLPHTHALATE	ND	10	5
CHRYSENE	ND	10	5
DI-N-BUTYLPHTHALATE	ND	10	5
DI-N-OCTYLPHTHALATE	ND	10	5
DIBENZO(A,H)ANTHRACENE	ND	10	5
DIBENZOFURAN	ND	10	5
DIETHYLPHTHALATE	ND	10	5
DIMETHYLPHTHALATE	ND	10	5
FLUORANTHENE	ND	10	5
FLUORENE	ND	10	5
HEXACHLOROBENZENE	ND	10	5
HEXACHLOROBUTADIENE	ND	10	5
HEXACHLOROCYCLOPENTADIENE	ND	10	5
HEXACHLOROETHANE	ND	10	5
INDENO(1,2,3-CD)PYRENE	ND	10	5
N-NITROSO-DI-N-PROPYLAMINE	ND	10	5
N-NITROSODIPHENYLAMINE (2)	ND	10	5
NAPHTHALENE	ND	10	5
NITROBENZENE	ND	10	5
PENTACHLOROPHENOL	ND	10	10
PHENANTHRENE	ND	10	5
PHENOL	ND	10	5
PYRENE	ND	10	5

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	101	25-134
2-FLUOROBIPHENYL	80	43-125
2-FLUOROPHENOL	72	25-125
NITROBENZENE-D5	76	32-125
PHENOL-D5	77	25-125
TERPHENYL-D14	95	42-126

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 3520B/8270B

MATRIX:	WATER			% MOISTURE:	NA
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	MBLK1W				
LAB SAMP ID:	SVK022WB	SVK022WL	SVK022WC		
LAB FILE ID:	RKX073	RKX074	RKX075		
DATE EXTRACTED:	11/15/0211:00	11/15/0211:00	11/15/0211:00	DATE COLLECTED:	NA
DATE ANALYZED:	11/16/0211:41	11/16/0212:13	11/16/0212:46	DATE RECEIVED:	NA
PREP. BATCH:	SVK022W	SVK022W	SVK022W		
CALIB. REF:	RJX007	RJX007	RJX007		

ACCESSION:

PARAMETER	BLNK RSLT (ug/L)	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,2,4-Trichlorobenzene	ND	100	74.9	75	100	72.1	72	4	44-142	20
1,4-Dichlorobenzene	ND	100	71.5	71	100	69.7	70	2	30-125	20
2,4-Dinitrotoluene	ND	100	97.2	97	100	93.9	94	3	39-139	20
2-Chlorophenol	ND	150	113	76	150	110	73	3	41-125	20
4-Chloro-3-Methylphenol	ND	150	123	82	150	121	81	2	44-125	20
4-Nitrophenol	ND	150	90	60	150	90.4	60	1	25-131	20
Acenaphthene	ND	100	90.2	90	100	90	90	0	49-125	20
N-Nitroso-di-n-propylamine	ND	100	87.6	88	100	89.5	89	2	37-125	20
Pentachlorophenol	ND	150	130	87	150	131	88	1	28-136	20
Phenol	ND	150	103	69	150	104	69	1	25-125	20
Pyrene	ND	100	95.2	95	100	91.2	91	4	47-136	20

SURROGATE PARAMETER	SPIKE AMT (ug/L)	BS RSLT (ug/L)	BS % REC	SPIKE AMT (ug/L)	BSD RSLT (ug/L)	BSD % REC	QC LIMIT (%)
2,4,6-Tribromophenol	150	166	111	150	156	104	25-134
2-Fluorobiphenyl	100	81.1	81	100	79.6	80	43-125
2-Fluorophenol	150	107	71	150	99.8	67	25-125
Nitrobenzene-d5	100	79.2	79	100	73.4	73	32-125
Phenol-d5	150	113	76	150	110	73	25-125
Terphenyl-d14	100	96.1	96	100	91	91	42-126

SW 3550B/8270C
SEMI VOLATILE ORGANICS BY GC/MS

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	NA
Batch No.	: 02K106	Date Extracted:	11/14/02 15:45
Sample ID:	MBLK1S	Date Analyzed:	11/16/02 13:50
Lab Samp ID:	SVK023SB	Dilution Factor:	1
Lab File ID:	RKX077	Matrix :	SOIL
Ext Btch ID:	SVK023S	% Moisture :	NA
Calib. Ref.:	RJX007	Instrument ID :	T-042

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
1,2,4-TRICHLOROBENZENE	ND	330	170
1,2-DICHLOROBENZENE	ND	330	170
1,3-DICHLOROBENZENE	ND	330	170
1,4-DICHLOROBENZENE	ND	330	170
2,4,5-TRICHLOROPHENOL	ND	830	170
2,4,6-TRICHLOROPHENOL	ND	330	170
2,4-DICHLOROPHENOL	ND	330	170
2,4-DIMETHYLPHENOL	ND	330	170
2,4-DINITROPHENOL	ND	830	170
2,4-DINITROTOLUENE	ND	330	170
2,6-DINITROTOLUENE	ND	330	170
2-CHLORONAPHTHALENE	ND	330	170
2-CHLOROPHENOL	ND	330	170
2-METHYLNAPHTHALENE	ND	330	170
2-METHYLPHENOL	ND	330	170
2-NITROANILINE	ND	830	170
2-NITROPHENOL	ND	330	170
3,3'-DICHLOROBENZIDINE	ND	330	170
3-NITROANILINE	ND	830	170
4,6-DINITRO-2-METHYLPHENOL	ND	830	170
4-BROMOPHENYL-PHENYL ETHER	ND	330	170
4-CHLORO-3-METHYLPHENOL	ND	330	170
4-CHLOROANILINE	ND	330	170
4-CHLOROPHENYL-PHENYL ETHER	ND	330	170
4-METHYLPHENOL (1)	ND	330	170
4-NITROANILINE	ND	830	170
4-NITROPHENOL	ND	830	170
ACENAPHTHENE	ND	330	170
ACENAPHTHYLENE	ND	330	170
ANTHRACENE	ND	330	170
BENZO(A)ANTHRACENE	ND	330	170
BENZO(B)FLUORANTHENE	ND	330	170
BENZO(K)FLUORANTHENE	ND	330	170
BENZO(G,H,I)PERYLENE	ND	330	170
BIS(2-CHLOROETHOXY)METHANE	ND	330	170
BIS(2-CHLOROISOPROPYL)ETHER	ND	330	170
BIS(2-ETHYLHEXYL)PHTHALATE	ND	330	170
BUTYLBENZYLPHTHALATE	ND	330	170
CHRYSENE	ND	330	170
DI-N-BUTYLPHTHALATE	ND	330	170
DI-N-OCTYLPHTHALATE	ND	330	170
DIBENZOFURAN	ND	330	170
DIETHYLPHTHALATE	ND	330	170
DIMETHYLPHTHALATE	ND	330	170
FLUORANTHENE	ND	330	170
FLUORENE	ND	330	170
HEXACHLOROBUTADIENE	ND	330	170
HEXACHLOROCYCLOPENTADIENE	ND	330	170
HEXACHLOROETHANE	ND	330	170
N-NITROSODIPHENYLAMINE (2)	ND	330	170
NAPHTHALENE	ND	330	170
NITROBENZENE	ND	330	170
PENTACHLOROPHENOL	ND	200	170
PHENANTHRENE	ND	330	170
PHENOL	ND	330	170
PYRENE	ND	330	170

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
2,4,6-TRIBROMOPHENOL	101	25-144
2-FLUOROBIPHENYL	90	34-135
2-FLUOROPHENOL	78	25-135
NITROBENZENE-D5	85	25-135
PHENOL-D5	83	25-135
TERPHENYL-D14	99	32-136

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 3550A/8270B

MATRIX: SOIL % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID: MBLK1S
LAB SAMP ID: SVK023SB SVK023SL
LAB FILE ID: RKX077 RKX078
DATE EXTRACTED: 11/14/0215:45 11/14/0215:45 DATE COLLECTED: NA
DATE ANALYZED: 11/16/0213:50 11/16/0214:23 DATE RECEIVED: NA
PREP. BATCH: SVK023S SVK023S
CALIB. REF: RJX007 RJX007

ACCESSION:

PARAMETER	BLNK RSLT (ug/kg)	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	QC LIMIT (%)
1,2,4-Trichlorobenzene	ND	3330	2690	81	34-152
1,4-Dichlorobenzene	ND	3330	2680	80	25-135
2,4-Dinitrotoluene	ND	3330	2920	88	29-149
2-Chlorophenol	ND	5000	3940	79	31-135
4-Chloro-3-Methylphenol	ND	5000	3960	79	34-135
4-Nitrophenol	ND	5000	2690	54	25-141
Acenaphthene	ND	3330	2990	90	39-135
Pentachlorophenol	ND	5000	3760	75	38-146
Phenol	ND	5000	3780	76	25-135
Pyrene	ND	3330	3040	91	37-146

SURROGATE PARAMETER	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	QC LIMIT (%)
2,4,6-Tribromophenol	5000	4440	89	25-144
2-Fluorobiphenyl	3330	2490	75	34-135
2-Fluorophenol	5000	3610	72	25-135
Nitrobenzene-d5	3330	2410	72	25-135
Phenol-d5	5000	3710	74	25-135
Terphenyl-d14	3330	2730	82	32-136

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 3550A/8270B

MATRIX:	SOIL			% MOISTURE:	11.4
DILUTION FACTOR:	1	1	1		
SAMPLE ID:	818655-B3114				
LAB SAMP ID:	K106-11	K106-11M	K106-11S		
LAB FILE ID:	RKX081	RKX079	RKX080		
DATE EXTRACTED:	11/14/0215:45	11/14/0215:45	11/14/0215:45	DATE COLLECTED:	11/12/02
DATE ANALYZED:	11/16/0216:00	11/16/0214:55	11/16/0215:28	DATE RECEIVED:	11/12/02
PREP. BATCH:	SVK023S	SVK023S	SVK023S		
CALIB. REF:	RJX007	RJX007	RJX007		

ACCESSION:

PARAMETER	SMPL RSLT (ug/kg)	SPIKE AMT (ug/kg)	MS RSLT (ug/kg)	MS % REC	SPIKE AMT (ug/kg)	MSD RSLT (ug/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
1,2,4-Trichlorobenzene	ND	3760	2860	76	3760	2720	72	5	34-152	30
1,4-Dichlorobenzene	ND	3760	2770	74	3760	2620	70	6	25-135	30
2,4-Dinitrotoluene	ND	3760	3190	85	3760	3070	82	4	29-149	30
2-Chlorophenol	ND	5640	4240	75	5640	3980	71	6	31-135	30
4-Chloro-3-Methylphenol	ND	5640	4360	77	5640	4290	76	2	34-135	30
4-Nitrophenol	ND	5640	3020	53	5640	3060	54	1	25-141	30
Acenaphthene	ND	3760	3250	86	3760	3210	86	1	39-135	30
Pentachlorophenol	ND	5640	4330	77	5640	4240	75	2	38-146	30
Phenol	ND	5640	4010	71	5640	3850	68	4	25-135	30
Pyrene	ND	3760	3240	86	3760	3040	81	6	37-146	30

SURROGATE PARAMETER	SPIKE AMT (ug/kg)	MS RSLT (ug/kg)	MS % REC	SPIKE AMT (ug/kg)	MSD RSLT (ug/kg)	MSD % REC	QC LIMIT (%)
2,4,6-Tribromophenol	5640	5140	91	5640	5830	103	25-144
2-Fluorobiphenyl	3760	2920	78	3760	3080	82	34-135
2-Fluorophenol	5640	3990	71	5640	4340	77	25-135
Nitrobenzene-d5	3760	2640	70	3760	2930	78	25-135
Phenol-d5	5640	4140	73	5640	4490	80	25-135
Terphenyl-d14	3760	3060	81	3760	3310	88	32-136

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS/SIM

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/14/02 15:45
Sample ID:	818655-B3106	Date Analyzed:	11/18/02 19:04
Lab Samp ID:	K106-04	Dilution Factor:	1
Lab File ID:	RKZ188	Matrix :	SOIL
Ext Btch ID:	SVK023S	% Moisture :	21.1
Calib. Ref.:	RJZ052	Instrument ID :	T-048

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	42	13
BIS(2-CHLOROETHYL)ETHER	ND	42	19
DIBENZO(A,H)ANTHRACENE	ND	42	13
HEXACHLOROBENZENE	ND	95	13
INDENO(1,2,3-CD)PYRENE	ND	44	13
N-NITROSO-DI-N-PROPYLAMINE	ND	42	13

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	104	32-136

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS/SIM

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
Batch No.	: 02K106	Date Extracted:	11/14/02 15:45
Sample ID:	818655-B3107	Date Analyzed:	11/18/02 19:34
Lab Samp ID:	K106-05	Dilution Factor:	1
Lab File ID:	RKZ189	Matrix :	SOIL
Ext Btch ID:	SVK023S	% Moisture :	18.0
Calib. Ref.:	RJZ052	Instrument ID :	T-048

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	40	12
BIS(2-CHLOROETHYL)ETHER	ND	40	18
DIBENZO(A,H)ANTHRACENE	ND	40	12
HEXACHLOROBENZENE	ND	91	12
INDENO(1,2,3-CD)PYRENE	ND	43	12
N-NITROSO-DI-N-PROPYLAMINE	ND	40	12

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	129	32-136

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

SW 3550B/8270C SIM
SEMI VOLATILE ORGANICS BY GC/MS/SIM

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	NA
Batch No.	: 02K106	Date Extracted:	11/14/02 15:45
Sample ID:	MBLK1S	Date Analyzed:	11/18/02 17:04
Lab Samp ID:	SVK023SB	Dilution Factor:	1
Lab File ID:	RKZ184	Matrix :	SOIL
Ext Btch ID:	SVK023S	% Moisture :	NA
Calib. Ref.:	RJZ052	Instrument ID :	T-048

PARAMETERS	RESULTS (ug/kg)	RL (ug/kg)	MDL (ug/kg)
BENZO(A)PYRENE	ND	33	10
BIS(2-CHLOROETHYL)ETHER	ND	33	15
DIBENZO(A,H)ANTHRACENE	ND	33	10
HEXACHLOROBENZENE	ND	75	10
INDENO(1,2,3-CD)PYRENE	ND	35	10
N-NITROSO-DI-N-PROPYLAMINE	ND	33	10

SURROGATE PARAMETERS	% RECOVERY	QC LIMIT
TERPHENYL-D14	125	32-136

RL: Reporting Limit
(1): Cannot be separated from 3-Methylphenol
(2): Cannot be separated from Diphenylamine

EMAX QUALITY CONTROL DATA
LCS ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW 3550B/8270C SIM

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MATRIX:	SOIL		% MOISTURE:	NA
DILUTION FACTOR:	1	2		
SAMPLE ID:	MBLK1S			
LAB SAMP ID:	SVK023SB	SVK023SL		
LAB FILE ID:	RKZ184	RKZ185		
DATE EXTRACTED:	11/14/0215:45	11/14/0215:45	DATE COLLECTED:	NA
DATE ANALYZED:	11/18/0217:04	11/18/0217:34	DATE RECEIVED:	NA
PREP. BATCH:	SVK023S	SVK023S		
CALIB. REF:	RJZ052	RJZ052		

ACCESSION:

PARAMETER	BLNK RSLT (ug/kg)	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	QC LIMIT (%)
n-Nitroso-di-n-propylamine	ND	3330	3450	104	27-135

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SURROGATE PARAMETER	SPIKE AMT (ug/kg)	BS RSLT (ug/kg)	BS % REC	QC LIMIT (%)
Terphenyl-d14	3330	3930	118	32-136

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: SW 3550B/8270C SIM

MATRIX:	SOIL			% MOISTURE:	11.4
DILUTION FACTOR:	1	2	2		
SAMPLE ID:	818655-B3114				
LAB SAMP ID:	K106-11	K106-11M	K106-11S		
LAB FILE ID:	RKZ191	RKZ186	RKZ187		
DATE EXTRACTED:	11/14/0215:45	11/14/0215:45	11/14/0215:45	DATE COLLECTED:	11/12/02
DATE ANALYZED:	11/18/0220:34	11/18/0218:04	11/18/0218:34	DATE RECEIVED:	11/12/02
PREP. BATCH:	SVK023S	SVK023S	SVK023S		
CALIB. REF:	RJZ052	RJZ052	RJZ052		

ACCESSION:

PARAMETER	SMPL RSLT (ug/kg)	SPIKE AMT (ug/kg)	MS RSLT (ug/kg)	MS % REC	SPIKE AMT (ug/kg)	MSD RSLT (ug/kg)	MSD % REC	RPD (%)	QC LIMIT (%)	MAX RPD (%)
n-Nitroso-di-n-propylamine	ND	3760	3810	101	3760	3360	89	12	27-135	30

SURROGATE PARAMETER	SPIKE AMT (ug/kg)	MS RSLT (ug/kg)	MS % REC	SPIKE AMT (ug/kg)	MSD RSLT (ug/kg)	MSD % REC	QC LIMIT (%)
Terphenyl-d14	3760	4110	109	3760	4450	118	32-136

METHOD 3010A/6010B
METALS BY ICP

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
SDG NO.	: 02K106	Date Extracted:	11/14/02 14:10
Sample ID:	818655-B3111	Date Analyzed:	11/18/02 16:46
Lab Samp ID:	K106-09	Dilution Factor:	1
Lab File ID:	I07K034024	Matrix :	WATER
Ext Btch ID:	IPK046W	% Moisture :	NA
Calib. Ref.:	I07K034014	Instrument ID :	EMAXTI07

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Aluminum	ND	500	61
Antimony	ND	500	40
Barium	ND	100	2
Beryllium	ND	10	1.0
Cadmium	ND	5	2
Calcium	975J	1000	32
Chromium	ND	50	6
Cobalt	ND	50	11
Copper	ND	50	5
Iron	32.1J	1000	25
Magnesium	928J	1000	54
Manganese	ND	20	3
Molybdenum	ND	100	7
Nickel	ND	150	10
Potassium	ND	5000	750
Silver	ND	50	11
Sodium	4710	1000	70
Vanadium	ND	100	5
Zinc	ND	20	5

L: Reporting Limit

METHOD 3010A/6010B
METALS BY ICP

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
SDG NO.	: 02K106	Date Extracted:	11/14/02 14:10
Sample ID:	818655-B3111	Date Analyzed:	11/15/02 14:43
Lab Samp ID:	K106-09	Dilution Factor:	1
Lab File ID:	I31K025023	Matrix :	WATER
Ext Btch ID:	IPK046W	% Moisture :	NA
Calib. Ref.:	I31K025014	Instrument ID :	EMAXTI31

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5	4
Lead	ND	5	2
Selenium	ND	5	5
Thallium	ND	10	6

RL: Reporting Limit

METHOD 3050B/6010B
METALS BY ICP

Client	: SHAW E&I	Date Collected:	11/12/02
Project	: EL TORO, CTO 0024	Date Received:	11/12/02
SDG NO.	: 02K106	Date Extracted:	11/14/02 16:30
Sample ID:	818655-B3106	Date Analyzed:	11/18/02 17:35
Lab Samp ID:	K106-04	Dilution Factor:	1
Lab File ID:	I07K034033	Matrix :	SOIL
Ext Btch ID:	IPK048S	% Moisture :	21.1
Calib. Ref.:	I07K034025	Instrument ID :	EMAXTI07

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	15700	63.4	5.68
Antimony	ND	6.34	2.67
Barium	115	1.27	.157
Beryllium	.578	.253	.15
Cadmium	ND	.634	.459
Calcium	4110	127	8.61
Chromium	12.7	2.53	.778
Cobalt	8.8	1.27	.876
Copper	8.98	2.53	.598
Iron	15500	25.3	1.93
Magnesium	6560	127	10.1
Manganese	202	2.53	.238
Molybdenum	1.73J	6.34	.935
Nickel	6.86	2.53	.697
Potassium	4080	127	90.7
Silver	ND	2.53	.796
Sodium	133	127	8.88
Vanadium	38.4	2.53	.555
Zinc	51.7	1.27	.365

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3010A/6010B

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IPK046WB	IPK046WL	IPK046WC		
LAB FILE ID:	I07K034016	I07K034017	I07K034018		
DATIME EXTRCTD:	11/14/0214:10	11/14/0214:10	11/14/0214:10	DATE COLLECTED:	NA
DATIME ANALYZD:	11/18/0216:04	11/18/0216:10	11/18/0216:15	DATE RECEIVED:	11/14/02
PREP. BATCH:	IPK046W	IPK046W	IPK046W		
CALIB. REF:	I07K034014	I07K034014	I07K034014		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	10000	9940	99	10000	9880	99	1	80-120	15
Antimony	ND	5000	4700	94	5000	4710	94	0	80-120	15
Barium	ND	1000	916	92	1000	911	91	1	80-120	15
Beryllium	ND	1000	992	99	1000	985	98	1	80-120	15
Cadmium	ND	1000	1000	100	1000	996	100	1	80-120	15
Calcium	ND	50000	48300	97	50000	48000	96	1	80-120	15
Chromium	ND	1000	966	97	1000	956	96	1	80-120	15
Cobalt	ND	1000	962	96	1000	957	96	0	80-120	15
Copper	ND	1000	996	100	1000	992	99	0	80-120	15
Iron	ND	10000	9650	97	10000	9590	96	1	80-120	15
Magnesium	ND	50000	49200	98	50000	49400	99	0	80-120	15
Manganese	ND	1000	966	97	1000	959	96	1	80-120	15
Molybdenum	ND	1000	912	91	1000	909	91	0	80-120	15
Nickel	ND	1000	958	96	1000	952	95	1	80-120	15
Potassium	ND	50000	49500	99	50000	49300	99	0	80-120	15
Silver	ND	1000	1010	101	1000	1000	100	0	80-120	15
Sodium	ND	50000	49500	99	50000	49200	98	0	80-120	15
Vanadium	ND	1000	978	98	1000	973	97	1	80-120	15
Zinc	ND	1000	1020	102	1000	1010	101	1	80-120	15

METHOD 3010A/6010B
METALS BY ICP

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/14/02
DG NO.	: 02K106	Date Extracted:	11/14/02 14:10
Sample ID:	MBLK1W	Date Analyzed:	11/15/02 14:10
Lab Samp ID:	IPK046WB	Dilution Factor:	1
Lab File ID:	I31K025016	Matrix :	WATER
Ext Btch ID:	IPK046W	% Moisture :	NA
Calib. Ref.:	I31K025014	Instrument ID :	EMAXTI31

PARAMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	5	4
Lead	ND	5	2
Selenium	ND	5	5
Thallium	ND	10	6

RL: Reporting Limit

METHOD 3010A/6010B
METALS BY ICP

: SHAW E&I	Date Collected: NA
: EL TORO, CTO 0024	Date Received: 11/14/02
DG : 02K106	Date Extracted: 11/14/02 14:10
ID: MBLK1W	Date Analyzed: 11/15/02 14:10
mp ID: IPK046WB	Dilution Factor: 1
le ID: I31K025016	Matrix : WATER
tch ID: IPK046W	% Moisture : NA
Ref.: I31K025014	Instrument ID : EMAXTI31

AMETERS	RESULTS (ug/L)	RL (ug/L)	MDL (ug/L)
senic	ND	5	4
ead	ND	5	2
elenium	ND	5	5
hallium	ND	10	6

L: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3010A/6010B

MATRIX:	WATER			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1W				
CONTROL NO.:	IPK046WB	IPK046WL	IPK046WC		
LAB FILE ID:	I31K025016	I31K025017	I31K025018		
DATIME EXTRCTD:	11/14/0214:10	11/14/0214:10	11/14/0214:10	DATE COLLECTED:	NA
DATIME ANALYZD:	11/15/0214:10	11/15/0214:14	11/15/0214:19	DATE RECEIVED:	11/14/02
PREP. BATCH:	IPK046W	IPK046W	IPK046W		
CALIB. REF:	I31K025014	I31K025014	I31K025014		

ACCESSION:

PARAMETER	BLNK RSLT ug/L	SPIKE AMT ug/L	BS RSLT ug/L	BS % REC	SPIKE AMT ug/L	BSD RSLT ug/L	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Arsenic	ND	1000	1010	101	1000	1020	102	0	80-120	15
Lead	ND	1000	920	92	1000	922	92	0	80-120	15
Selenium	ND	1000	1060	106	1000	1060	106	0	80-120	15
Thallium	ND	1000	921	92	1000	928	93	1	80-120	15

METHOD 3050B/6010B
METALS BY ICP

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/14/02
DG NO.	: 02K106	Date Extracted:	11/14/02 16:30
Sample ID:	MBLK1S	Date Analyzed:	11/18/02 17:01
Lab Samp ID:	IPK048SB	Dilution Factor:	1
Lab File ID:	I07K034027	Matrix :	SOIL
Ext Btch ID:	IPK048S	% Moisture :	NA
Calib. Ref.:	I07K034025	Instrument ID :	EMAXTI07

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Aluminum	ND	50	4.48
Antimony	ND	5	2.1
Barium	ND	1	.124
Beryllium	ND	.2	.118
Cadmium	ND	.5	.362
Calcium	ND	100	6.8
Chromium	ND	2	.614
Cobalt	ND	1	.691
Copper	ND	2	.472
Iron	ND	20	1.53
Magnesium	ND	100	7.99
Manganese	ND	2	.188
Molybdenum	ND	5	.738
Nickel	ND	2	.55
Potassium	ND	100	71.6
Silver	ND	2	.628
Sodium	ND	100	7.01
Vanadium	ND	2	.438
Zinc	ND	1	.288

.: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1S				
CONTROL NO.:	IPK048SB	IPK048SL	IPK048SC		
LAB FILE ID:	I07K034027	I07K034028	I07K034029		
DATIME EXTRCTD:	11/14/0216:30	11/14/0216:30	11/14/0216:30	DATE COLLECTED:	NA
DATIME ANALYZD:	11/18/0217:01	11/18/0217:07	11/18/0217:12	DATE RECEIVED:	11/14/02
PREP. BATCH:	IPK048S	IPK048S	IPK048S		
CALIB. REF:	I07K034025	I07K034025	I07K034025		

ACCESSION:

PARAMETER	BLNK RSLT mg/kg	SPIKE AMT mg/kg	BS RSLT mg/kg	BS % REC	SPIKE AMT mg/kg	BSD RSLT mg/kg	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Aluminum	ND	1000	908	91	1000	895	89	2	80-120	25
Antimony	ND	500	430	86	500	423	85	2	80-120	25
Barium	ND	100	86.1	86	100	84.2	84	2	80-120	25
Beryllium	ND	100	92.6	93	100	91.1	91	2	80-120	25
Cadmium	ND	100	86.7	87	100	86.4	86	0	80-120	25
Calcium	ND	5000	4370	87	5000	4350	87	1	80-120	25
Chromium	ND	100	88.6	89	100	87.6	88	1	80-120	25
Cobalt	ND	100	86.9	87	100	86.6	87	0	80-120	25
Copper	ND	100	91.1	91	100	89.4	89	2	80-120	25
Iron	ND	1000	886	89	1000	875	88	1	80-120	25
Magnesium	ND	5000	4450	89	5000	4470	89	0	80-120	25
Manganese	ND	100	88.1	88	100	87.2	87	1	80-120	25
Molybdenum	ND	100	85.9	86	100	85.3	85	1	80-120	25
Nickel	ND	100	86.3	86	100	85.9	86	0	80-120	25
Potassium	ND	5000	4470	89	5000	4420	88	1	80-120	25
Silver	ND	100	88.2	88	100	87.2	87	1	80-120	25
Sodium	ND	5000	4530	91	5000	4450	89	2	80-120	25
Vanadium	ND	100	90.5	90	100	89.5	89	1	80-120	25
Zinc	ND	100	88	88	100	87.5	88	1	80-120	25

METHOD 3050B/6010B
METALS BY ICP

Client	: SHAW E&I	Date Collected:	NA
Project	: EL TORO, CTO 0024	Date Received:	11/14/02
SDG NO.	: 02K106	Date Extracted:	11/14/02 16:30
Sample ID:	MBLK1S	Date Analyzed:	11/15/02 15:07
Lab Samp ID:	IPK048SB	Dilution Factor:	1
Lab File ID:	I31K025028	Matrix :	SOIL
Ext Btch ID:	IPK048S	% Moisture :	NA
Calib. Ref.:	I31K025026	Instrument ID :	EMAXTI31

PARAMETERS	RESULTS (mg/kg)	RL (mg/kg)	MDL (mg/kg)
Arsenic	ND	1	.21
Lead	ND	1	.174
Selenium	ND	1	.285
Thallium	ND	1	.305

RL: Reporting Limit

EMAX QUALITY CONTROL DATA
LCS/LCD ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL			% MOISTURE:	NA
DILTN FACTR:	1	1	1		
SAMPLE ID:	MBLK1S				
CONTROL NO.:	IPK048SB	IPK048SL	IPK048SC		
LAB FILE ID:	I31K025028	I31K025029	I31K025030		
DATIME EXTRCTD:	11/14/0216:30	11/14/0216:30	11/14/0216:30	DATE COLLECTED:	NA
DATIME ANALYZD:	11/15/0215:07	11/15/0215:12	11/15/0215:17	DATE RECEIVED:	11/14/02
PREP. BATCH:	IPK048S	IPK048S	IPK048S		
CALIB. REF:	I31K025026	I31K025026	I31K025026		

ACCESSION:

PARAMETER	BLNK RSLT mg/kg	SPIKE AMT mg/kg	BS RSLT mg/kg	BS % REC	SPIKE AMT mg/kg	BSD RSLT mg/kg	BSD % REC	RPD %	QC LIMIT %	MAX RPD %
Arsenic	ND	100	93.5	94	100	94.1	94	1	80-120	25
Lead	ND	100	87.6	88	100	87.8	88	0	80-120	25
Selenium	ND	100	93.4	93	100	92.9	93	0	80-120	25
Thallium	ND	100	86.8	87	100	87	87	0	80-120	25

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

:LIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
ETHOD: METHOD 3010A/6010B

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MATRIX: WATER % MOISTURE: NA
ILUTION FACTOR: 1 5
AMPLE ID: MN3002 MN3002DL
EMAX SAMP ID: K054-02 K054-02T
AB FILE ID: I07K034020 I07K034021
ATE EXTRACTED: 11/14/0214:10 11/14/0214:10 DATE COLLECTED: 11/06/02
ATE ANALYZED: 11/18/0216:25 11/18/0216:30 DATE RECEIVED: 11/07/02
PREP. BATCH: IPK046W IPK046W
ALIB. REF: I07K034014 I07K034014

CCESSION:

ARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Aluminum	177J	ND	NA	10
ntimony	ND	ND	0	10
arium	65.5J	64.7J	NA	10
eryllium	ND	ND	0	10
Cadmium	ND	ND	0	10
alcium	28800	28600	1	10
hromium	ND	ND	0	10
obalt	ND	ND	0	10
Copper	ND	ND	0	10
ron	471J	474J	NA	10
agnesium	40700	39600	3	10
Manganese	1630	1610	1	10
Molybdenum	ND	ND	0	10
ickel	ND	ND	0	10
otassium	7250	6860J	NA	10
Silver	ND	ND	0	10
Sodium	14900	13400	10	10
anadium	ND	ND	0	10
inc	ND	ND	0	10

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 3010A/6010B

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MATRIX:	WATER		% MOISTURE:	NA
DILUTION FACTOR:	1	5		
SAMPLE ID:	MN3002	MN3002DL		
EMAX SAMP ID:	K054-02	K054-02T		
LAB FILE ID:	I31K025020	I31K025021		
DATE EXTRACTED:	11/14/0214:10	11/14/0214:10	DATE COLLECTED:	11/06/02
DATE ANALYZED:	11/15/0214:29	11/15/0214:34	DATE RECEIVED:	11/07/02
PREP. BATCH:	IPK046W	IPK046W		
CALIB. REF:	I31K025014	I31K025014		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SERIAL DIL RSLT (ug/L)	DIF RSLT %	QC LIMIT (%)
Arsenic	ND	ND	0	10
Lead	ND	ND	0	10
Selenium	ND	ND	0	10
Thallium	ND	ND	0	10

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

LIENT:	SHAW E&I
PROJECT:	EL TORO, CTO 0024
ATCH NO.:	02K106
ETHOD:	METHOD 3050B/6010B

ATRIX:	SOIL		% MOISTURE:	19.4
ILUTION FACTOR:	1	5		
SAMPLE ID:	818655-B3103	818655-B3103DL		
EMAX SAMP ID:	K106-01	K106-01T		
AB FILE ID:	I07K034031	I07K034032		
ATE EXTRACTED:	11/14/0216:30	11/14/0216:30	DATE COLLECTED:	11/12/02
DATE ANALYZED:	11/18/0217:22	11/18/0217:29	DATE RECEIVED:	11/12/02
PREP. BATCH:	IPK048S	IPK048S		
ALIB. REF:	I07K034025	I07K034025		

ACCESSION:

ARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Aluminum	7920	7990	1	10
ntimony	10.6	ND	NA	10
arium	196	197	1	10
Beryllium	.328	ND	NA	10
Cadmium	6.03	6	0	10
alcium	15100	15700	4	10
hromium	50.5	52.9	5	10
Cobalt	7.85	7.23	8	10
Copper	159	161	1	10
on	28500	30500	7	10
agnesium	3590	3670	2	10
Manganese	242	254	5	10
Molybdenum	10.6	10.6J	NA	10
ckel	27.1	30.7	13*	10
otassium	3460	3270	5	10
Silver	ND	ND	0	10
Sodium	2940	2940	0	10
nadium	26.1	27.4	5	10
nc	2000	2130	6	10

EMAX QUALITY CONTROL DATA
SERIAL DILUTION ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
BATCH NO.: 02K106
METHOD: METHOD 3050B/6010B

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MATRIX:	SOIL		% MOISTURE:	19.4
DILUTION FACTOR:	1	5		
SAMPLE ID:	818655-B3103	818655-B3103DL		
EMAX SAMP ID:	K106-01	K106-01T		
LAB FILE ID:	I31K025032	I31K025033		
DATE EXTRACTED:	11/14/0216:30	11/14/0216:30	DATE COLLECTED:	11/12/02
DATE ANALYZED:	11/15/0215:27	11/15/0215:34	DATE RECEIVED:	11/12/02
PREP. BATCH:	IPK048S	IPK048S		
CALIB. REF:	I31K025026	I31K025026		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SERIAL DIL RSLT (mg/kg)	DIF RSLT %	QC LIMIT (%)
Arsenic	6.98	7.81	12*	10
Lead	1430	1480	4	10
Selenium	1.29	2.81J	NA	10
Thallium	ND	ND	0	10

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3010A/6010B

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MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MN3002			
CONTROL NO.:	K054-02	K054-02A		
LAB FILE ID:	I07K034020	I07K034019		
DATIME EXTRCTD:	11/14/0214:10	11/14/0214:10	DATE COLLECTED:	11/06/02
DATIME ANALYZD:	11/18/0216:25	11/18/0216:20	DATE RECEIVED:	11/07/02
PREP. BATCH:	IPK046W	IPK046W		
CALIB. REF:	I07K034014	I07K034014		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Aluminum	177J	10000	9180	90	75-125
Antimony	ND	5000	4240	85	75-125
Barium	65.5J	1000	898	83	75-125
Beryllium	ND	1000	903	90	75-125
Cadmium	ND	1000	893	89	75-125
Calcium	28800	50000	70900	84	75-125
Chromium	ND	1000	885	89	75-125
Cobalt	ND	1000	860	86	75-125
Copper	ND	1000	892	89	75-125
Iron	471J	10000	9110	86	75-125
Magnesium	40700	50000	83400	85	75-125
Manganese	1630	1000	2400	77	75-125
Molybdenum	ND	1000	837	84	75-125
Nickel	ND	1000	863	86	75-125
Potassium	7250	50000	51800	89	75-125
Silver	ND	1000	897	90	75-125
Sodium	14900	50000	58400	87	75-125
Vanadium	ND	1000	880	88	75-125
Zinc	ND	1000	904	90	75-125

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3010A/6010B

MATRIX:	WATER		% MOISTURE:	NA
DILTN FACTR:	1	1		
SAMPLE ID:	MN3002			
CONTROL NO.:	K054-02	K054-02A		
LAB FILE ID:	I31K025020	I31K025019		
DATIME EXTRCTD:	11/14/0214:10	11/14/0214:10	DATE COLLECTED:	11/06/02
DATIME ANALYZD:	11/15/0214:29	11/15/0214:24	DATE RECEIVED:	11/07/02
PREP. BATCH:	IPK046W	IPK046W		
CALIB. REF:	I31K025014	I31K025014		

ACCESSION:

PARAMETER	SMPL RSLT (ug/L)	SPIKE AMT (ug/L)	AS RSLT (ug/L)	AS % REC	QC LIMIT (%)
Arsenic	ND	1000	950	95	75-125
Lead	ND	1000	881	88	75-125
Selenium	ND	1000	981	98	75-125
Thallium	ND	1000	884	88	75-125

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3050B/6010B

MATRIX:	SOIL		% MOISTURE:	19.4
DILTN FACTR:	1	1		
SAMPLE ID:	818655-B3103(COMPOSITE)			
CONTROL NO.:	K106-01	K106-01A		
LAB FILE ID:	I07K034031	I07K039017		
DATIME EXTRCTD:	11/14/0216:30	11/14/0216:30	DATE COLLECTED:	11/12/02
DATIME ANALYZD:	11/18/0217:22	11/20/0219:27	DATE RECEIVED:	11/12/02
PREP. BATCH:	IPK048S	IPK048S		
CALIB. REF:	I07K034025	I07K039015		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Aluminum	7920	1240	9340	114	75-125
Antimony	10.6	620	512	81	75-125
Barium	196	124	306	89	75-125
Beryllium	.328	124	112	90	75-125
Cadmium	6.03	124	111	84	75-125
Calcium	15100	6200	20800	93	75-125
Chromium	50.5	124	158	86	75-125
Cobalt	7.85	124	109	81	75-125
Copper	159	124	273	92	75-125
Iron	28500	1240	30400	148*	75-125
Magnesium	3590	6200	9120	89	75-125
Manganese	242	124	349	86	75-125
Molybdenum	10.6	124	112	82	75-125
Nickel	27.1	124	128	81	75-125
Potassium	3460	6200	9200	93	75-125
Silver	ND	124	106	86	75-125
Sodium	2940	6200	8600	91	75-125
Vanadium	26.1	124	134	87	75-125
Zinc	2000	124	2120	91	75-125

EMAX QUALITY CONTROL DATA
ANALYTICAL SPIKE ANALYSIS

CLIENT: SHAW E&I
PROJECT: EL TORO, CTO 0024
SDG NO.: 02K106
METHOD: METHOD 3050B/6010B

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MATRIX:	SOIL		% MOISTURE:	19.4
DILTN FACTR:	1	1		
SAMPLE ID:	818655-B3103			
CONTROL NO.:	K106-01	K106-01A		
LAB FILE ID:	I31K025032	I31K025031		
DATIME EXTRCTD:	11/14/0216:30	11/14/0216:30	DATE COLLECTED:	11/12/02
DATIME ANALYZD:	11/15/0215:27	11/15/0215:22	DATE RECEIVED:	11/12/02
PREP. BATCH:	IPK048S	IPK048S		
CALIB. REF:	I31K025026	I31K025026		

ACCESSION:

PARAMETER	SMPL RSLT (mg/kg)	SPIKE AMT (mg/kg)	AS RSLT (mg/kg)	AS % REC	QC LIMIT (%)
Arsenic	6.98	124	119	90	75-125
Lead	1430	124	1470	29*	75-125
Selenium	1.29	124	113	90	75-125
Thallium	ND	124	102	82	75-125

APPENDIX G
DATA VALIDATION REPORT

The DV Group, Inc.

DATA VALIDATION REPORT

Project / Site Name:	MCAS El Toro, CTO #24
Project No.:	818655
Data Reviewer:	S. Obleas, The Data Validation Group, Inc.
Review Date:	December 12, 2002
Matrix:	6 Soils / 2 Waters
Parameters:	M8015 Gasoline and Diesel; Volatiles 8260B; Semivolatiles 8270C; Semivolatiles-SIM 8270C; PCBs 8082; Pesticides 8081A; Mercury 7470/7471A; Metals 6010B
Validation Level:	EPA Level III
Laboratory:	EMAX Analytical Lab Inc.
Sample Delivery Group (SDG) No.:	02K106
Sample Nos.:	818655-B3105, 818655-B3106, 818655-B3107, 818655-B3109, 818655-B3110, 818655-B3111, 818655-B3113, 818655-B3114
Collection Date(s):	November 12, 2002
Comments:	Field duplicates: not performed. Trip Blank: 818655-B3105 Equipment rinsate: 818655-B3111

The data were qualified according to the U.S. Environmental Protection Agency (EPA) documents "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review" (1999) and "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (1994). In addition, the Data Validation Services Statement of Work for MCAS El Toro was used along with other EPA methods.

S.R. Obleas, President

S.R. Obleas, President

CURSORY DATA VALIDATION SUMMARY TABLE

Analysis	Holding Times	Surrogates	MS/MSD	LCS	Blanks	Calibration	Internal Standards	Field Duplicates	Other
Method M8015 **Gasoline**	√	√	N/A	√	√	√	N/A	N/A	√
Method M8015 **Diesel**	√	√	√	√	√	√	N/A	N/A	√
Method 8260B **Volatiles**	√	√	N/A	√	√	√	√	N/A	√
Method 8270C **Semivolatiles**	√	√	√	√	√	√	√	N/A	√
Method 8270C **Semivolatiles-SIM**	√	√	√	√	√	√	√	N/A	√
Method 8082 **PCBs**	√	√	√	√	√	√	N/A	N/A	√
Method 8081A **Pesticides**	√	√	**Pg. 5**	√	√	**Pg. 5**	N/A	N/A	**Pg. 6**
Method 7470A/7471A **Mercury**	√	N/A	√	√	√	√	N/A	N/A	√
Method 6010B **Metals**	√	N/A	**Pg. 7, 8**	√	**Pg. 7**	√	N/A	N/A	**Pg. 8**

Notes:

√ indicates that all quality control criteria were met for the parameter as specified in the prescribed methods and data validation guidelines.

N/A indicates the parameter is not applicable to an analysis.

If criteria were not met and the data were qualified, a page number is indicated where the qualification is detailed.

The data were evaluated for all validation criteria and were found to be in control except where noted. Any outliers are described in the text.

DATA ASSESSMENT

GASOLINE (Method M8015)

I. Cursory criteria met.

DIESEL (Method M8015)

I. Cursory criteria met.

VOLATILES (Method 8260B)

I. Cursory criteria met.

SEMIVOLATILES (Method 8270C)

I. Cursory criteria met.

SEMIVOLATILES-SIM (Method 8270C)

I. Cursory criteria met.

PCBS (Method 8082)

I. Cursory criteria met.

III. Compound Identification

A Due to confirmation problems, the following results are considered nondetected (UJ)

- alpha-BHC in samples 818655-B3106 and 818655-B3110

The result reported was detected below the RL, and a percent difference (%D) greater than 50% was noted in the analyte concentration between the quantitation column and the confirmation column. The %Ds are listed below.

Sample ID	Compound	%D	Reported Conc.	Modified Final Conc.
818655-B3106	alpha-BHC	69	0.00076 J	0.0025 UJ
818655-B3110	alpha-BHC	224	0.0011 J	0.0023 UJ

MERCURY (Method 7470A/7471A)

I. **Cursory criteria met.**

METALS (Method 6010B)

I. **Blank Contamination**

A Due to calibration and method blank contamination, the following results are considered nondetected (U).

- Iron in sample 818655-B3111.
- Selenium in samples 818655-B3106, 818655-B3107, 818655-B3110, and 818655-B3113.

The following metals were detected in the associated calibration and method blanks at the concentrations noted below.

Analyte	Blank ID	Concentration, units
Iron	ICB	18 8 ug/L; 1 88 mg/Kg
Selenium	CCB2	5.84 ug/L; 0 584 mg/Kg

Detected results less than 5x the maximum blank contamination were qualified.

B. Due to equipment rinsate blank contamination, the following results are considered nondetected (U).

- Sodium in samples 818655-B3106, 818655-B3107, 818655-B3109, 818655-B3110, 818655-B3113, and 818655-B3114.

The following analytes were detected in the associated field, trip, and equipment rinsate blanks at the concentrations noted below

Analyte	Blank ID	Concentration, units
Sodium	818655-B3111 (equipment rinsate)	4710 ug/L; 471 mg/Kg

Detected results less than 5x the maximum blank contamination were qualified.

II. **Analytical Spike**

A. Due to accuracy problems, the following detected results are qualified as estimated (J).

- Lead in samples 818655-B3106, 818655-B3107, 818655-B3109, 818655-B3110, 818655-B3113, and 818655-B3114

The recoveries outside the QC limits are listed below.

Sample ID	Analyte	%R	QC Limits
818655-B3103	Lead	29.0	75 - 125%

Spike recoveries less than 74% indicate that detects may be biased low and false nondetects may have been reported.

B. Due to accuracy problems, the following detected results are qualified as estimated (J)

- Iron in samples 818655-B3106, 818655-B3107, 818655-B3109, 818655-B3110, 818655-B3113, and 818655-B3114

The recoveries outside the QC limits are listed below.

Sample ID	Analyte	%R	QC Limits
818655-B3103	Iron	148	75 - 125%

Spike recoveries above 125% indicate that detected results may be biased high.

III. Serial Dilution

A. Due to serial dilution problems, the following detected results are qualified as estimated (J)

- Arsenic and Nickel in samples 818655-B3106, 818655-B3107, 818655-B3109, 818655-B3110, 818655-B3113, and 818655-B3114

The percent difference between the original sample result and the dilution result was outside the QC limits of 10% for analyte concentrations as shown below.

Sample ID	Analyte	%D
818655-B3103	Arsenic	12
	Nickel	13

MCAS El Toro, CTO 24
Gasoline – Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG

MCAS El Toro, CTO 24
Gasoline – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
Diesel – Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
Diesel – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG

MCAS El Toro, CTO 24
Volatiles – Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
Volatiles – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
Semivolatiles – Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
Semivolatiles – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
Semivolatiles-SIM – Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
Semivolatiles-SIM – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG.

MCAS El Toro, CTO 24
PCBs – Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG

MCAS El Toro, CTO 24
PCBs – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG

MCAS El Toro, CTO 24
Pesticides – Data Qualification Summary – SDG 02K106

Continuing Calibration qualifications

Sample	Compound	Qualification	Protocol / Advisory
818655-B3106	Heptachlor	UJ	Protocol
	Endrin	UJ	Protocol
	4,4'-DDT	UJ	Protocol
	Methoxychlor	UJ	Protocol
818655-B3109	Heptachlor	UJ	Protocol
	Endrin	UJ	Protocol
	4,4'-DDT	UJ	Protocol
	Methoxychlor	UJ	Protocol
818655-B3110	Heptachlor	UJ	Protocol
	Endrin	UJ	Protocol
	4,4'-DDT	UJ	Protocol
	Methoxychlor	UJ	Protocol

Compound Identification qualifications

Sample	Compound	Modified Final Conc.	Qualification	Protocol / Advisory
818655-B3106	alpha-BHC	0.0025	UJ	Protocol
818655-B3110	alpha-BHC	0.0023	UJ	Protocol

MCAS El Toro, CTO 24
Pesticides – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG

MCAS El Toro, CTO 24
Mercury – Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG

MCAS El Toro, CTO 24
Mercury – Laboratory Blank Data Qualification Summary – SDG 02K106

No Sample Data Qualified in this SDG

MCAS El Toro, CTO 24
Metals – Data Qualification Summary – SDG 02K106

Analytical Spike qualifications

Sample	Compound	Qualification	Protocol / Advisory
818655-B3106	Iron	J	Protocol
	Lead	J	Protocol
818655-B3107	Iron	J	Protocol
	Lead	J	Protocol
818655-B3109	Iron	J	Protocol
	Lead	J	Protocol
818655-B3110	Iron	J	Protocol
	Lead	J	Protocol
818655-B3113	Iron	J	Protocol
	Lead	J	Protocol
818655-B3114	Iron	J	Protocol
	Lead	J	Protocol

Serial Dilution qualifications

Sample	Compound	Qualification	Protocol / Advisory
818655-B3106	Arsenic	J	Protocol
	Nickel	J	Protocol
818655-B3107	Arsenic	J	Protocol
	Nickel	J	Protocol
818655-B3109	Arsenic	J	Protocol
	Nickel	J	Protocol
818655-B3110	Arsenic	J	Protocol
	Nickel	J	Protocol
818655-B3113	Arsenic	J	Protocol
	Nickel	J	Protocol
818655-B3114	Arsenic	J	Protocol
	Nickel	J	Protocol

MCAS El Toro, CTO 24
Metals – Laboratory Blank Data Qualification Summary – SDG 02K106

Laboratory Blank qualifications

Compound	Associated Samples	Qualification	Protocol / Advisory
Iron	818655-B3111	U	Advisory
Selenium	818655-B3106	U	Advisory
	818655-B3107	U	Advisory
	818655-B3110	U	Advisory
	818655-B3113	U	Advisory

Equipment rinsate qualifications

Compound	Associated Samples	Qualification	Protocol / Advisory
Sodium	818655-B3106	U	Advisory
	818655-B3107	U	Advisory
	818655-B3109	U	Advisory
	818655-B3110	U	Advisory
	818655-B3113	U	Advisory
	818655-B3114	U	Advisory

OVERALL ASSESSMENT OF DATA

I. Method Compliance and Additional Comments

A. All analyses were conducted within all specifications of the requested methods.

II. Usability

A. Due to continuing calibration problems in the Pesticide analysis, the following were qualified as estimated: Heptachlor, Endrin, 4,4'-DDT and Methoxychlor for three samples. alpha-BHC was qualified as estimated for two samples due to high percent difference between the primary and secondary columns.

B. Due to calibration blank contamination in the Metals analysis, the following were considered nondetected: Iron for one sample; Selenium for four samples. Due to equipment rinsate contamination, the following were considered nondetected: Sodium for six samples. Due to accuracy problems, Iron and Lead were qualified as estimated for six samples. Arsenic and Nickel were qualified as estimated for six samples due to serial dilution problems.

C. The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable. Sample results that were found to be rejected (R) are unusable for all purposes. Sample results that were found to be estimated (J) are usable for limited purposes only. Based upon the cursory and full data validation all other results are considered valid and usable for all purposes. In general, the absence of rejected data and the small number of qualifiers added to the data indicate high usability.