UNITED STATES POSTAL SERVICE

October 2, 2013

Dilan Roe
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Oakland Vehicle Maintenance Facility, 1675 7th Street, Oakland, CA
Perjury Statement

Dear Mr. Roe:

I declare, under the penalty of perjury, that to the best of my knowledge the information and recommendations as represented to me in the attached Closure Request Report are true and correct.

Sincerely:

Emmy Andrews
Facilities Environmental Specialist

Attachments

Cc: Gary Gunderson, TRC

1300 EVANS AVENUE, SUITE 200
SAN FRANCISCO, CA 94188-8200
FAX (415) 550-5205 PHONE (415) 550-5110

Closure Request
USPS Oakland Vehicle Maintenance Facility
1675 7th Street
Oakland, California

This report has been prepared for:

United States Postal Service
Pacific Facilities Service Office
1300 Evans St, Suite 200
San Francisco CA 94188-8200

RB Case No. 01-0487
ACEH Case No. RO0000016

September 24, 2013
Project No. 180497.3

Jacob P. Zepeda
Senior Staff Geologist

Elizabeth P. Schwartz, P.G.
Senior Project
Hydrogeologist

Gary Gunderson, P.E.
Senior Project Manager

One Concord Center, 2300 Clayton Road, Suite 610, Concord, California 94520
Main: 925-688-1200 Fax: 925-688-0388
website: www.trcsolutions.com

One Concord Center
2300 Clayton Road, Suite 610
Concord, CA 94520

925.688.1200 PHONE
925.688.0388 FAX

www.TRCsolutions.com

September 24, 2013
180497.3

Ms. Emmy Andrews
UNITED STATES POSTAL SERVICE
Pacific Facilities Service Office
1300 Evans St, Suite 200
San Francisco California 94188-8200

RE: CLOSURE REQUEST
USPS OAKLAND VMF
1675 7TH STREET
OAKLAND, CALIFORNIA

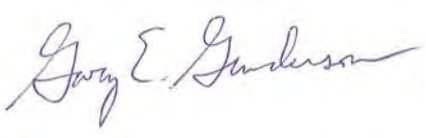
Dear Ms. Andrews:

The attached report presents a request for environmental case closure based on the State Water Resources Control Board's *Low-Threat Underground Storage Tank Case Closure Policy* for the United States Postal Service's Oakland Vehicle Maintenance Facility (VMF), located at 1675 7th Street in Oakland, California.

We refer you to the text of the report for details regarding this study. If you have any questions, please call and we will be glad to discuss them with you.

Very truly yours,

TRC



Gary Gunderson, P.E.
Senior Project Manager

GG:JPZ:jcm

Copies: Addressee (email)
USPS Denver
Attn: Anne Wolf
USPS Oakland VMF/GMF (1)
Attn: Mr. Steven M. Quan
Alameda County Department of Environmental Health (1)
Attn: Ms. Barbara Jakub

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CLOSURE REQUEST
USPS OAKLAND VMF
1675 7TH STREET
OAKLAND, CALIFORNIA

1.0 INTRODUCTION

1.1 Purpose

This report presents the request for environmental case closure for the United States Postal Service's (USPS's) Oakland Vehicle Maintenance Facility (VMF) located at 1675 7th Street in Oakland, California (Figure 1). This work was performed for the Alameda County Department of Environmental Health (ACDEH) based on current Site conditions and a review of previous work activities. The closure request includes information to demonstrate that the Site meets the criteria for low-risk case closure as outlined by the State Water Resources Control Board's (SWRCB) *Low-Threat Underground Storage Tank Case Closure Policy* adopted May 1, 2012 (SWRCB, 2012). This request for closure is based on soil and groundwater conditions at the Site. Additionally, a conceptual site model (CSM) presented in Table 1 has been prepared in tabular format at the request of the ACDEH.

2.0 SITE BACKGROUND

2.1 Site Description

The Site is currently operating as a USPS VMF and General Mail Facility (GMF), located in a commercial-industrial mixed-zone area. The Site is bounded to the north by 7th Street, the Bay Area Rapid Transit, and commercial businesses, to the east by Peralta Street, South Prescott Park, and residential houses, and to the south and west by Interstate 880 and Union Pacific Intermodal rail yard. Most of the surrounding land use is industrial and commercial. A site vicinity map is included as Figure 1 and a site plan showing monitoring well locations is included as Figure 2.

Prior to being occupied as a mail facility, the property was occupied by residences prior to the mid- 1960s. Historically, the residences in the West Oakland neighborhood were removed for the construction of the large United States Postal Mail Facility and the nearby West Oakland BART station.

Over the years, several USTs and three hydraulic lifts have been removed from the Site. The USPS VMF currently operates a fueling facility served by three 12,000-gallon diesel USTs.

2.2 Geology and Hydrogeology

The Site is located at approximately 14 feet above mean sea level (msl; Google Earth). The Site topography is relatively flat. The soils beneath the Site consist primarily of medium dense to dense silty and clayey fine sands (Geo Resource Consultants Inc., 1993) from the Early Holocene Temescal Formation (California Department of Water Resources Groundwater [DWR] Bulletin 118, Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin).

The Site lies within the East Bay Plain Subbasin of the Santa Clara Valley Groundwater Basin Hydrologic Basin. This basin is a northwest trending alluvial plain dominated by the Santa Clara, Alameda, and Temescal Formations of Early Pleistocene to Early Holocene time, and artificial fill. The unconsolidated sediments include alluvial fan deposits interfingered with lake, swamp, river channel, and flood plain deposits; alluvial fan deposits bounded by mud deposits; and silts and clays with gravel layers. Annual average rainfall is approximately 23 inches. Groundwater in the East Bay Plain Subbasin is impacted in 13 distinct locations mainly from fuels and solvents, restricted to the upper 50 feet of the subsurface (DWR Groundwater Bulletin 118). Groundwater at the Site has historically occurred at depths ranging from approximately 3.5 to 15.0 feet below ground surface (bgs), and groundwater flow has been primarily to the southwest. Groundwater elevations and elevation contours are shown on Figure 4. Current groundwater elevations for monitoring wells are summarized in Table 2. Historical groundwater level elevations are shown in Appendix A, Table A-2.

3.0 SUMMARY OF SITE INVESTIGATIONS AND REMEDIAL ACTIVITIES

Several phases of investigations have been conducted at the Site since the removal of underground storage tanks (USTs) in 1991. Site investigation and remediation activities conducted to date focused on investigation and remediation associated with the UST removals and hydraulic lifts, and include the following (in chronological order):

- **November 1991** –Geo/Resource Consultants, Inc (GRC) removed several former USTs from the Site.
- **June 1992** – Additional USTs were removed by GRC and replaced by four new USTs.
- **September 1993** – Monitoring wells (MW-1 through MW-5) were installed by Harding Lawson Associates (HLA)
- **1993 to 1996** –HLA performed quarterly groundwater monitoring from 1993 until to 1996, when oversight of the Site was transferred.
- **June 1995** – Separate phase hydrocarbons (SPH, also known as free product) was discovered in well MW-4. The SPH was removed by HLA with absorbent socks and bailers.
- **1997** - Herbst Engineering removed three hydraulic lifts within the VMF building.
- **June 1997** –The Tier 1 Human Health Risk Assessment (Tier 1 HHRA) was completed by HLA. HLA recommended case closure in their historic summary report and closure request.
- **June 1997 and February 1998** – USPS submitted a closure request to ACDEH.
- **May 1998** – The closure request was denied by the ACDEH because benzene concentrations in shallow soil exceeded the Tier I HHRA cleanup levels. ACDEH requested a Tier II HHRA for the Site.
- **August 1999** – Lowney Associates conducted a sampling and analysis program around former hydraulic lifts within the VMF.
- **1999** – Lowney Associates submitted the Tier II HHRA to the ACDEH.
- **February 2000** –The ACDEH sent a letter to USPS indicating that the ACDEH intended to make a determination that no further action was required at the Site.

- **February 2000** – The ACDEH sent an additional letter to USPS indicating that before site closure could be issued, the groundwater had to be analyzed for Methyl Tertiary-Butyl Ether (MTBE) and a Tier II HHRA needed to be prepared.
- **March 2000** – Lowney Associates performed an additional soil and groundwater investigation in the vicinity of the former hydraulic lifts.
- **November 2000** – The ACDEH indicated receipt of Tier II HHRA, but requested groundwater sample results from MW-4.
- **January 2001** – Lowney Associates submitted a Groundwater Quality Evaluation Report indicating 1 to 2 inches of SPH were observed in well MW-4, and recommended the continuation of quarterly groundwater monitoring at the Site.
- **April 2001** – ACDEH directed USPS to continue quarterly groundwater monitoring.
- **March 2002** – Professional Service Industries (PSI) performed quarterly groundwater monitoring on behalf of USPS.
- **May through August 2002** – ACDEH requested additional information from USPS, clarification and validity of the Tier II HHRA, sampling and analysis of groundwater from well MW-4, removal of SPH from MW-4, and delineation of the SPH plume. In July 2002, PSI submitted the Site Investigation & Free-Product Removal Workplan addressing ACDEH's requests. ACDEH approved PSI's Workplan for site investigation and product removal. In August 2002, PSI modified the Workplan, and the ACDEH approved the modification.
- **August through October 2002** – SPH (identified as degraded diesel) was removed from well MW-4 until no evidence of product was observed. In September, monitoring well MW-6 was installed down-gradient of the fuel island.
- **December 2002** – PSI submitted their report entitled "*Historic Summary Report and Closure Request, USPS GMF/VMF*" to the ACDEH.
- **July 2008** –USPS received a letter from ACDEH indicating the Site was not claimed in the SWRCB's GeoTracker database.
- **July 2009** –USPS received a Notice of Violation from ACDEH for failing to claim the Site in GeoTracker. USPS subsequently claimed the Site in GeoTracker.
- **March 2010** – The ACDEH performed a Closure Review Report for the Site, which was submitted to GeoTracker.
- **December 2010** – TRC redeveloped and sampled all five Site monitoring wells.
- **March 2011** – TRC submitted the 2010 Fourth Quarter Groundwater Monitoring Report.
- **July 2011** – ACDEH submitted a letter of request to USPS, which requested quarterly groundwater monitoring, a soil vapor workplan, and data submission to GeoTracker.
- **September 2011** – USPS requested a reduction of groundwater monitoring frequency from quarterly to semi-annually. USPS also requested an extension for submittal of the soil vapor investigation work plan.
- **February 10, 2012** - TRC verbally proposed a revised schedule for submittal of the soil vapor investigation work plan of March 16, 2012. The request was approved by the ACDEH via email correspondence.

- **March 2012 -** TRC submitted the Workplan for Soil Vapor Investigation on March 19, 2012.
- **January through September 2012** – TRC sampled all Site wells during the semi-annual groundwater monitoring events. Measurable SPH was discovered in well MW-4 during January 2012 and February 2012. TRC removed SPH from monitoring wells in February 2012. Semi-annual reports were submitted to ACDEH in March and September 2012. TRC monitored SPH levels in well MW-4 monthly from January through April 2013.
- **May 2013** – TRC contacted the ACDEH to request an update on the status of closure determination for the project. ACDEH verbally agreed that a soil vapor investigation was not warranted due to the insignificant risk posed by total petroleum hydrocarbons (TPH) in soil and the Low-Threat Closure policy regarding soil vapor potential at active fueling sites. ACDEH requested a closure request report in order to determine if low-threat closure was appropriate for the Site.

Details of the available Site reports and previous Site investigations are summarized below. Historical soil analytical data are shown in Table 3. Current groundwater analytical results and current field measured parameters are presented in Tables 4 and 5. Historical groundwater analytical data are shown in Appendix A, Table A-1. The approximate location of historical soil borings are shown on Figure 3. Not all historical sampling locations could be determined, as reports indicating some historical locations were not available.

3.1 UST Removal and Replacement

In November 1991, one 750-gallon waste-oil UST, one 5,000-gallon gasoline UST, and two 10,000-gallon diesel USTs were removed from the Oakland VMF. An additional 10,000-gallon diesel UST was removed from the Site in June 1992. Strong hydrocarbon odors and visible contamination were present within the UST pit excavations, and a small hole in the bottom of the gasoline UST was identified during removal. Sampling and analysis of the soil and groundwater from below the USTs and product piping was performed concurrently with soil excavation activities. Soil analytical results from these areas indicated the presence of elevated concentrations of total petroleum hydrocarbons as diesel (TPHd), gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (collectively known as BTEX compounds) (PSI 2002). Heavy metals (cadmium, chromium, lead, nickel, and zinc) were also detected in soil samples collected from the former 750-gallon UST excavation, but odors and discoloration of soil were not present. Groundwater was not encountered from the base of the 1991 UST excavations (at 16 feet bgs), but was encountered at the base of the 1992 UST excavation (at 12 feet bgs). Groundwater collected from the 1992 UST excavation contained elevated concentrations of TPHd (72,000 micrograms per liter [µg/L]), benzene (3.8 µg/L), and xylenes (12 µg/L).

Following the removal of the USTs, GeoResource Consultants oversaw the installation of three new 12,000-gallon USTs (one gasoline and two diesel) near the southwest corner of the USPS parking garage, and one new 1,000-gallon waste-oil aboveground storage tank (AST).

Based on the elevated concentrations of TPHd, benzene, and xylenes detected in soil and groundwater sampled during the 1992 UST removal activities, the ACDEH requested a groundwater investigation and further evaluation of soil contamination. Later in 1992, following the June excavation activities, additional hydrocarbon-impacted soil was removed from the Site near the location of two former diesel USTs (PSI, 2002).

3.2 Soil and Groundwater Investigation and Well Installations

In September 1993, HLA performed a subsurface investigation in which nine soil borings were drilled, and 25 soil samples were collected and analyzed for TPHd, TPHg, and BTEX compounds. Five of the drilled borings were converted to groundwater monitoring wells (MW-1 through MW-5) which were completed to a depth of 20 feet bgs. Elevated concentrations of TPHd (2,400 milligrams per kilogram [mg/Kg]), TPHg (53 mg/Kg), and xylenes (0.087 mg/Kg) were detected in soil collected at 3 feet beneath the former-fuel dispenser island from soil boring B-4 (now monitoring well MW-4). Elevated concentrations of TPHd (84 mg/Kg), TPHg (180 mg/Kg), benzene (0.15 mg/Kg), toluene (0.35 mg/Kg), ethylbenzene (2.1 mg/Kg), and xylenes (13 mg/Kg) were detected in soil collected at 6 feet beneath the fuel dispenser island from soil boring B-8 (near monitoring well MW-3). Benzene (0.04 mg/Kg) was detected in soil at 2.5 feet bgs from soil boring B-2 (now well MW-2). TPHd was detected in a groundwater sample collected from monitoring well MW-4 at a concentration of 580 µg/L. No other petroleum hydrocarbons were detected in the other groundwater samples collected during the investigation.

3.3 Groundwater Monitoring

Quarterly groundwater monitoring was initiated at the Site in January 1994 at the five wells. However, by December 1994, construction of Interstate 880 in the vicinity of the Site (Cypress Freeway Reconstruction Project) required the removal of monitoring well MW-5. ACDEH approved the abandonment of well MW-5, which was located up-gradient of the UST removal areas and had been non-detect for petroleum hydrocarbons since being installed in 1993. TPHd concentrations in wells MW-1, MW-2, MW-3 and MW-4 showed an increase during June 1994 to June 1995. In June 1995, SPH was discovered in well MW-4 and removed with absorbent socks and bailers.

3.4 Tier I Human Health Risk Assessment and Initial Closure Request

By June 1997, HLA completed a groundwater well search, chemical data compilation of groundwater and soil contamination, and a Tier 1 HHRA to evaluate and assess whether Site closure was justifiable. A summary of their work performed was provided in their report. In their report, HLA had concluded that "no risk-based remediation is necessary and case closure is recommended." Mr. Kayode Kadara with USPS presented the report by HLA to Ms. Jennifer Eberle with ACDEH in June 1997 and to Mr. Larry Seto with ACDEH in February 1998. The request for Site closure was reviewed and denied by Mr. Seto and Madhulla Logan with ACDEH in May 1998. ACDEH indicated that the maximum concentrations of benzene detected in shallow soils at the Site exceeded Tier I cleanup levels, and that a Tier II ASTM Risk Based Corrective Action (RBCA) or HHRA should be done for the Site using a construction worker scenario due to the presence of impacted soil within 5 feet of the ground surface.

3.5 Hydraulic Lift removal and Soil and Groundwater Characterization

In 1997, Herbst Engineering removed three hydraulic lifts within the VMF building. During the removal, Herbst Engineering contracted JB Environmental to characterize and dispose of the observed soil contamination in these hydraulic lift areas. The stockpiled and drummed soil and sludge was analyzed for heavy metals (California Assessment Manual [CAM 17]), TPHg, TPHd, BTEX, TPH as motor oil (TPHmo), and chlorinated volatile organic compounds (VOCs) for disposal. Analytical results indicated that the impacted soil and sludge contained high concentrations of TPHmo, up to 12,000 mg/Kg, and traces of chlorinated hydrocarbons. An initial

investigation of the soil and groundwater impacted by leaking hydraulic lifts was conducted by Lowney Associates (now known as TRC) in August 1999. The investigation identified high concentrations of total recoverable petroleum hydrocarbons (TRPH) in soil (up to 48,000 mg/Kg), and in groundwater (up to 61 mg/L); benzene in groundwater was detected at 0.0065 mg/L. The follow-up soil and groundwater investigation, conducted by Lowney Associates in March 2000, consisted of seven borings in the vicinity of the former-leaking hydraulic lifts where soil and groundwater was previously tested for TRPH and BTEX compounds. The investigation revealed that the impacts from the leaking hydraulic lifts were limited to the area immediately surrounding the lifts, with no significant migration of contaminants.

3.6 Additional Characterization Requirements from ACDEH to USPS

In February 2000, Mr. Thomas Peacock, manager of ACDEH local oversight program (LOP), submitted a letter to Mr. Sean McFadden of the USPS entitled *Intent to Make a Determination That No Further Action Is Required*, indicating that the LOP intended to make a determination that no further action was required or to issue a closure letter for the Site. An additional letter sent to Mr. McFadden (USPS) from Mr. Seto (ACDEH) indicated that groundwater had not been tested for methyl-tert butyl ether (MTBE). The letter indicated that before Site closure could be issued, another groundwater sample must be collected from well MW-4 and analyzed for TPHg, TPHd, BTEX, and MTBE, in addition to completing a Tier II RBCA.

In a letter dated November 8, 2000, Mr. Larry Seto (ACDEH) indicated receipt of the Tier II HHRA dated October 11, 1999 by Lowney Associates, but that ACDEH had not received laboratory analysis for the groundwater sample collected from well MW-4, and that a groundwater sample must be collected from MW-4 before case closure could be issued. In addition, the letter notified USPS that Mr. Tom Peacock with ACDEH would be the new case officer for the Site. On November 1, 2000, Lowney Associates collected a groundwater sample from well MW-4, at which time the well was observed to contain approximately 1 to 2 inches of SPH. The subsequent Groundwater Quality Evaluation Report (January 2001) by Lowney Associates recommended that quarterly groundwater monitoring at the Site continue.

In a letter dated April 9, 2001, Mr. Barney Chan with ACDEH directed Mr. McFadden (USPS) to resume quarterly groundwater monitoring and to include analyses of polyaromatic hydrocarbons (PAHs) to the groundwater monitoring requirements (in addition to TPHg, TPHd, BTEX, and MTBE). Mr. Chan also requested that USPS provide: 1) a map indicating the location of the soil samples from past tank removals, 2) a tabulation of the initial and confirmation soil sample results, 3) a map indicating the location of hydraulic lifts and samples relative to the former and existing USTs, 4) an analysis of residual concentrations of hydraulic fluid in soil and groundwater, and 5) an analysis of the need for further site characterization.

3.7 Continuation of Groundwater Monitoring and Closure Request

In March 2002, quarterly groundwater monitoring continued by PSI on the behalf of USPS. Quarterly groundwater monitoring included sampling of groundwater from wells MW-1 through MW-4. Wells MW-1 through MW-3 were analyzed for TPHg, TPHd, and VOCs (including BTEX and MTBE). Well MW-4 was analyzed for semi-volatile organic compounds (SVOCs) and PAHs due to observed SPH in the well at the time. During the March 2002 sampling event, TPHd was detected in MW-3 at 540 µg/L and MTBE was detected in MW-3 at 3.8 µg/L and in MW-4 at 8.5 µg/L. Additional VOCs and SVOCs (sec-butylbenzene, napthalene, n-propylbenzene, anthracene, di-n-octylphalate, flourene, 2-methylnapthalene, naphthalene, phenanthrene, and pyrene) were

detected in the groundwater sample collected from MW-4, but only naphthalene was above the EPA Region IX Preliminary Remediation Goals (PRG) at 46 µg/L.

Through correspondence between Mr. Chan (ACDEH), Mr. Roland Queyquep with USPS, and Mr. Ross and Mr. Burfield with PSI (consultant for the USPS) during May through August 2002, ACDEH requested the following to be completed by USPS:

- Clarification of data presented in the Tier II HHRA and an assessment of the continued validity of the HHRA conclusions;
- Sampling and analysis of the SPH in MW-4;
- Removal of SPH from MW-4; and
- Delineation of the SPH plume.

PSI addressed Mr. Chan's (ACDEH) requests in the submitted *Workplan: Site Investigation & Free-Product Removal* dated July 17, 2002 (Workplan). The ACDEH approved the Workplan in their letter dated July 19, 2002. Modifications to the Workplan (screening and analysis of soil samples from the proposed boring, clarification of the groundwater sampling method, and installation of a permanent well) were submitted to ACDEH by PSI on August 19, 2002. ACDEH approved the modifications in their letter dated August 23, 2002.

Quarterly groundwater monitoring in 2002 was conducted by PSI and results indicated that 4.32 inches of SPH was observed in MW-4. The SPH was fingerprinted as degraded diesel. PSI removed the SPH (approximately 1 to 2 gallons) from well MW-4 from August through October 2002, until SPH was no longer apparent within the well. In September 2002, PSI installed monitoring well MW-6 approximately 60 feet down-gradient of wells MW-3 and MW-4 per ACDEH request to delineate the plume down-gradient of the fuel island. Analytical results from the 2002 quarterly groundwater monitoring events indicated no TPHg in the wells except for MW-4. TPHd was detected in wells MW-1, MW-3, and MW-4, but significantly decreased from the first to the fourth quarter; BTEX was not detected in the groundwater samples collected except for toluene, which was detected at low concentrations in MW-6. MTBE was detected in wells MW-1 through MW-4, ranging from 4 to 7 µg/L.

On December 30, 2002, PSI submitted their *Historic Summary Report and Closure Request, USPS GMF/VMF* to Mr. Barney Chan (ACDEH). In their report, PSI reviewed the Tier II HHRA and indicated that the conclusions of the HHRA with respect to estimated health risk "are not only valid, but are conservative for current Site conditions." PSI also concluded that there had been no significant leak of gasoline fuel as supported by the general absence of TPHg and BTEX constituents, and the low levels of MTBE in groundwater. They also concluded that additional remedial efforts to address residual concentrations of hydraulic fluid in soil and groundwater should not be required. PSI's efforts to remove TPHd SPH from MW-4 appeared successful, and that based on the volume of the SPH, the amount of discharge of TPHd to the groundwater was on the order of 1 to 2 gallons, and occurred suddenly during a short duration or single event release of diesel fuel centered around or within MW-4. On February 24, 2003, PSI submitted the Fourth Quarter 2002 Groundwater Monitoring Report to Mr. Barney Chan (ACDEH) and requested closure for the Site.

3.8 Correspondence and Groundwater Monitoring Gap

A correspondence gap between the ACDEH LOP and USPS occurred between 2003 and 2008, based on our review of the ACDEH LOP case files for the Site. This was apparent when an ACDEH letter to the USPS, dated July 3, 2008, identified the Site as having not been claimed in GeoTracker. A subsequent Notice of Violation (NOV) sent by the ACDEH dated July 24, 2009, was received by Mr. Roland Queyquep (USPS); the NOV was issued for failing to claim the Site in a timely fashion. USPS subsequently claimed the Site in GeoTracker.

3.9 ACDEH Site Closure Review

On March 11, 2010, Barbara Jakub of the ACDEH performed a site Closure Review that was submitted to the SWRCB's database, GeoTracker. In the Closure Review letter, she identified potential vapor intrusion as one of the main impediments to obtaining case closure.

3.10 Continuation of Groundwater Monitoring and Sampling Program

In December 2010, TRC redeveloped and resurveyed the five existing monitoring wells at the Site prior to collection of groundwater samples. Laboratory analyses of groundwater from monitoring wells MW-1, MW-3, and MW-4 detected TPHd as dissolved phase hydrocarbons in concentrations ranging from 161 to 6,620 µg/L. TPHmo was detected in wells MW-2 and MW-4. TPHg and BTEX compounds were not detected above the laboratory reporting limits. MTBE was detected in groundwater samples collected from wells MW-3, MW-4, and MW-6, but were well below the Environmental Screening Level (ESL) of 5 µg/L. Other fuel oxygenates, (including tertiary butyl alcohol [TBA], diisopropyl ether [DIPE], ethyl tertiary butyl ether [ETBE], tertiary amyl methyl ether (TAME), and semi-volatiles 1,2-dichloroethane [1,2-DCA], naphthalene, or other PAHs) were not detected above groundwater ESLs.

The results of the December 2010 monitoring event were submitted by TRC to the ACDEH in the *Fourth Quarter 2010 Groundwater Monitoring Report, USPS Oakland Vehicle Maintenance Facility, 1675 7th Street, Oakland, California,* dated March 18, 2011. ACDEH responded to the report in a letter dated July 22, 2011, entitled *Request for Work Plan and Product Removal for Fuel Leak Case No. RO0000016.* In their letter, ACDEH requested resumption of quarterly groundwater monitoring at the Site, submittal of a soil vapor investigation workplan and upload of boring logs to GeoTracker. USPS responded in a letter dated September 12, 2011, requesting a reduction of groundwater monitoring frequency to semi-annually and an extension on the deadline for submittal of the soil vapor investigation workplan. During a telephone conference on February 10, 2012, TRC proposed a revised schedule for submittal of the soil vapor investigation work plan of March 16, 2012. This verbal request was approved by the ACDEH in an e-mail on February 10, 2012. During this exchange, TRC confirmed that the due dates for the first and third quarter 2012 monitoring reports were March 30, 2012 and September 30, 2012, respectively.

During the first semi-annual groundwater monitoring event of 2012, dissolved phase concentrations of TPHg and TPHd detected in monitoring well MW-4 exceeded the ESL of 100 µg/L for TPHg and middle distillates. The concentrations had increased since the fourth quarter of 2010 from below reporting limits to 290 µg/L of TPHg, and from 6,620 to 14,000 µg/L of TPHd in well MW-4. TPHg and TPHd were not detected in groundwater in any other wells during the first semi-annual 2012 monitoring event. Also during the first quarter of 2012, SPH was observed in well MW-4, from 1/8-inch in January 2012 to more than ¾-inch in February 2012. TRC used bailers and absorbent socks to remove the SPH from well MW-4; a total of 25

gallons of groundwater with the SPH were extracted from the well in February 2012. In March 2012, a passive collection system 'skimmer' was placed in the well to recover SPH. Continual monitoring of the SPH in well MW-4 has occurred monthly or bi-monthly thereafter.

During the second semi-annual 2012 monitoring event, SPH had not been detected in well MW-4 for six months, and the concentrations of TPHg (180 µg/L) and TPHd (4,500 µg/L) had decreased significantly. TPHmo was detected at 130 µg/L in well MW-4; TPHg and TPHd were not detected from groundwater samples in the other wells. BTEX and other fuel oxygenates were also not detected above laboratory reporting limits. MTBE was detected, however, well below the groundwater ESL of 5 µg/L. TRC recommended that ACDEH re-evaluate the Site for closure and that a CSM be compiled with a closure package for review. TRC submitted the *Workplan for Soil Vapor Investigation* on March 19, 2012.

In the first semi-annual groundwater monitoring report for 2013, concentrations of TPHd (2,500 µg/L) and TPHmo (210 µg/L) were detected in groundwater from well MW-4 and TPHg decreased below the ESL of 100 µg/L; TPHmo (390 µg/L) was detected in well MW-2; and TPHd was detected in low concentrations in wells MW-1 (110 µg/L), MW-2 (170 µg/L), and MW-3 (240 µg/L), and was detected below the ESL in well MW-6. BTEX and other fuel oxygenates were not detected above laboratory reporting limits. MTBE was detected in groundwater from wells MW-3, MW-4, and MW-6, but were well below the groundwater ESL of 5 µg/L. Figure 5 presents the dissolved-phase TPHd isocentration map for the first semi-annual 2013 monitoring event. TPHd, TPHg, TPHmo, and MTBE, results for April 2013 are illustrated in Figure 6.

Based on recent groundwater monitoring events, since the February 2012 extraction of SPH and groundwater, SPH has not been observed in well MW-4 through April 15, 2013. Apparent petroleum sheen was observed on the groundwater from the well, but no actual SPH has been present for approximately one year of monitoring. SPH thickness measurements are presented in Table 6. A SPH thickness trend graph for MW-4 is provided in Figure 10.

TRC contacted ACDEH in May 2013 regarding status of the project and recommendations regarding our general closure request for the Site as indicated in our semi-annual monitoring reports. Barbara Jakub (ACDEH) verbally agreed that a soil vapor investigation was not warranted due to the insignificant risk posed by TPH in soil and the *Low-Threat Underground Storage Tank Case Closure Policy* regarding soil vapor potential at active fueling sites. The ACDEH indicated a site closure package with a conceptual site model would be amenable for review of the project to date.

4.0 NEIGHBORING ENVIRONMENTAL CLEANUP SITES

There are seven environmental cleanup sites located within a ½-mile radius of the Site. Five environmental cleanup sites are identified as active on SWRCB's GeoTracker, DTSC's Envirostor, and USEPA's Pacific Southwest Superfund Sites. Four of the five active sites are located cross-gradient of the Site, and one is located up-gradient of the Site. These five sites are identified on Figure 7.

The former Chevron station site is located at 800 Center Street, Oakland, California, which is approximately 0.22 miles east-northeast (up-gradient) of the Site. The former Chevron station site was an active service station from 1932 to 1973. Groundwater and soil vapor at the former Chevron station site are impacted with TPHd, TPHg, BTEX, and MTBE. However, MW-8, Chevron's off-site down-gradient monitoring well, appears not be impacted by the former

Chevron station based on sampling results dating back to September 2010 (Conestoga-Rovers & Associates, 2012). Given the furthest down-gradient monitoring well at the former Chevron station has been historically below reporting limits for hydrocarbon constituents, it does not appear to be a source of dissolved phase contaminates to the groundwater beneath the Site.

The former Red Star Yeast Company site is located at 1396 5th Street, Oakland, California, which is approximately 0.32 miles east (cross-gradient) of the Site. The former Red Star Yeast Company site was used for manufactured yeast, produced vinegar, and various other brewery operations. The company used ASTs,USTs, and various chemicals. There have been several documented releases associated with the ASTs, USTs, and other chemicals including an unauthorized release of mercury to the sewer system. Several remedial actions have removed the majority of the impacts, but lead remains an issue in soil and the groundwater beneath the portions of the property are impacted with TPHd and oil-range TPH (Citadel, 2011). Based on the distance and direction of this site, it is unlikely that groundwater contaminants originating from this location would migrate to the Site.

The ACMO Chemical Superfund Site (ACMO) is located at 1414 3rd Street, Oakland, California with additional parcels identified as part of the Superfund site located at 1448 3rd Street, 324 Center Street, and 336-346 Center Street, Oakland, California. ACMO is approximately 0.27 miles east (cross-gradient) of the Site. The property was owned and operated as a chemical distribution facility from the 1960s to 1989. Bulk chemicals were off-loaded from rail spur on the property and stored in drums, ASTs, and USTs before being transferred to smaller containers for resale. In addition to the drums, ASTs, and USTs, a pipe network was used to transfer chemicals to various locations around the property. Groundwater, soil, soil gas, and air are impacted with volatile organic compounds (VOCs), semi-VOCs, petroleum hydrocarbons, organochlorine pesticides, polychlorinated biphenyls (PCBs), metals, and dioxin/furans. Groundwater under the AMCO property has measurable non-aqueous phase liquid (NAPL), both dense and light NAPL (CH2M Hill, 2011). It is unlikely that this location is contributing to the impaction of the Site, given its cross-gradient orientation from the Site.

The All Weather Door site is located at 1851 5th Street, Oakland, California, which is approximately 0.20 miles west (cross-gradient) of the Site. The All Weather Door site is identified as a leaking UST site impacted with gasoline. This location is not considered a potential source of off-site contamination because the groundwater flow direction is not up-gradient to the Site.

The Southern Pacific Desert Rail site is located at 515 Bay Street, Oakland, California, which is approximately 0.22 miles west-northwest (cross-gradient) of the Site. The Southern Pacific Desert Rail site is identified as a leaking UST site impacted with gasoline. The local groundwater flow direction and orientation also preclude this site from potential source consideration.

The remaining two environmental cleanup sites are located adjacent to the south and southeastern boundary of the Site. One of the environmental cleanup sites is the South Prescott Neighborhood Park, which is also a potential sensitive receptor (see Figure 8). The second cleanup site is identified as the I-880 realignment corridor, adjacent to the southern boundary of the Site, within the right-of-way of the current Highway 880 route. Both environmental cleanup sites were associated with the West Oakland and Desert Rail Yards in Oakland, California. The rail yards were impacted with petroleum hydrocarbons, VOCs, PAHs, metals (specifically lead), and PCBs. The DTSC issued a site certification of completion for the South Prescott Neighborhood Park in May 2001. Remedial action activities have cleaned up the I-880 realignment corridor to acceptable levels for the intended land reuse. Based on the down-gradient

orientation to the Site and ongoing inspection and compliance with land use covenants, the remaining impacts within the I-880 realignment corridor will likely not impact the Site.

Based on the distance, direction, level of contamination present and/or protective measures in place at these sites, it is unlikely that soil, soil vapor and groundwater contaminants originating from these locations would migrate to the Site.

5.0 SENSITIVE RECEPTOR SURVEY

In July 2013, TRC conducted a survey to identify water supply wells, surface bodies of water, schools and other public use areas within a 0.5-mile of the Site. TRC requested well data from the Alameda County Public Works Agency (ACPWA) Water Resources Section, and used the SWRCB's GeoTracker database and the Alameda County Environmental Health Geographical Information System (GIS) to determine if any water supply wells were in close proximity to the Site. Additionally, the Site area was reviewed using Google Earth and United States Geological Survey (USGS) Quadrangle topographic maps to identify other potential receptors. Select receptors identified by this survey are shown in Figure 8.

5.1 Water Supply Wells

According to the East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, the City of Oakland does not have plans to develop local groundwater resources for drinking water purposes (RWQCB, 1999). According to the ACPWA well data, there are no active potable-water supply wells within a ½ mile radius of the Site. A search using the SWRCB's GeoTracker database also confirms that there are no active potable-water supply wells within 0.5-mile radius of the Site.

However, while conducting investigation activities at the AMCO Superfund site, CH2M Hill discovered one well at the residence adjacent to the former AMCO facility (approximately 0.33 miles from the Site; CH2M Hill, 2011). The well was 3.25 feet in diameter and 9.3 to 10 feet deep, with an uneven gravel-filled bottom. CH2M Hill observed that the well was brick-lined and appeared hand-dug. No record of the well construction exists. Given the construction of this well, it is assumed that it is relatively old and likely constructed prior to government permitting or records. CH2M Hill inferred that the well was used for backyard irrigation and other non-potable uses. Based on the depth and construction of this well it is concluded that it is not a source of drinking water.

5.2 Surface Bodies of Water

The nearest surface water is the Oakland Inner Harbor, which is also known as the Oakland estuary. It is located approximately 0.83 miles south of the Site as indicated in Figure 8. The Oakland Inner Harbor is the strait of water that separates the cities of Oakland and Alameda, California. The Oakland Inner Harbor extends from the San Francisco Bay to the west, down to the San Leandro Bay to the southeast, which is connected to the San Francisco Bay. Lake Merritt also flows into the Oakland Inner Harbor.

5.3 Schools

There are two schools within 0.5-mile radius of the Site, Prescott Elementary School and Saint Patrick School. Both schools are greater than 1,000 feet from the Site. Prescott Elementary

School is located approximately 0.32 miles northeast of the Site, and Saint Patrick School is located approximately 0.38 miles northeast of the Site (ACDEH, 2013).

5.4 Other Public Use Areas

Public use areas other than schools within a 0.5-mile radius of the Site include one park, South Prescott Park, and two religious centers, Church of the Living God Faith and St. Patrick Catholic Church (Google Earth, 2013). South Prescott Park is located adjacent to the Site to the southeast. Church of the Living God Faith is cross-gradient approximately 0.15 miles southeast of the Site located at 310 Peralta Street. St. Patrick Catholic Church is up-gradient approximately 0.36 miles northeast of the Site located at 1023 Peralta Street.

6.0 EXPOSURE ASSESSMENT

The exposure assessment involves the identification of the potential exposure pathways from contaminant sources to human and ecological receptors. The identification of potential human and ecological receptors is based on the characteristics of the Site, the surrounding land uses, and the current and future land uses. Current conditions are as they exist today and future land use is anticipated to continue to be commercial/industrial.

A CSM is a site assessment tool developed to identify potential exposure pathways from contaminant sources to human and ecological receptors. Exposure pathways link the sources, locations, types of environmental releases, and environmental fate and transport with receptor locations and activity patterns. Generally, an exposure pathway is considered complete if it consists of the following four elements:

- a source and mechanism of release (e.g., release to the subsurface);
- a transport mechanism (e.g., dust or groundwater);
- a receptor (e.g., resident); and
- an exposure point (i.e., point of potential contact with a contaminated medium) and an exposure route (e.g., ingestion) at the exposure point for a specific receptor.

Figure 9 presents the CSM for exposure pathways at the Site. The development of the CSM should be considered an iterative process, enabling refinements as additional analytical and geologic data are collected or new land uses are considered. The CSM is presented in a tabulated format (Table 1) and is based on information obtained during previous investigations and continued commercial land use at the USPS Oakland VMF.

6.1 Transport Media

There are a number of mechanisms by which chemicals identified at the Site can migrate to other areas or to other media. Transport media at the Site are air, soil, soil vapor, and groundwater. Surface water has not been included as a transport medium due to the lack of surface water at or near the Site. In addition, the Site is presently developed as a USPS VMF and GMF with minimal landscaping and vegetation. As such, biotic uptake of contaminants has also been eliminated as a potential transport medium. The transport processes for air, soil, soil vapor, and groundwater are described below.

Air
Transport through air occurs when impacted surface soil particles are picked up and carried by the wind. Subsurface soil particles can also be released into the air during excavation or grading activities.

Soil
Transport of contaminants in soil occurs through leaching of liquid through pore spaces and volatilization of liquid into the gas phase. Contaminants that are highly soluble tend to percolate through soils quickly, such as MTBE and those that are less soluble, including TPHg and BTEX compounds, tend to reside in soils for longer periods of time. In addition, impacted soil may be distributed into non-impacted areas through construction activities such as excavation and grading.

Soil Vapor
Lateral and vertical migration of soil vapor in the vadose zone follows the path of least resistance, through coarser grained soils (i.e., sand lenses), utility corridors, and fractures. Vapors flow under the processes described as advection, diffusion, and dispersion; however, dispersion in the vapor phase is generally considered negligible compared to transport through advection and diffusion processes. Transport of soil vapor is influenced by a number of factors, including density, temperature, pressure, and concentration gradients. Density gradients occur when the contaminant is several times denser than ambient air, and generally only applies to soil vapor within coarse sediment. Thermal gradients typically only influence the migration of soil vapor near the surface, with the transport occurring from warmer to cooler areas. Changes in barometric pressure may influence vapor transport in the subsurface, although the effect is generally minimal. Molecular diffusion due to concentration gradients within soil vapor is the primary mechanism for transport of contaminants in soil vapor.

Groundwater
Once in groundwater, contaminants migrate under the processes of advection and dispersion, and, to a lesser degree, molecular diffusion. The primary mode of transport is advection, which is influenced by the aquifer material properties and hydraulic gradient. Dispersion also occurs as contaminant ions travel through various paths in the down-gradient, vertical and lateral direction, causing the contaminants to spread out. Molecular diffusion involves the movement of ions from high to low concentrated areas.

6.2 Potential Receptors

The identification of potential human receptors is based on the characteristics of the site, the surrounding land uses, and the hypothetical future land uses. The potential land uses and receptors include:

On-Site:

- Current USPS Postal VMF Land Use:
  - Current Commercial/Industrial worker (Postal Service employees and subcontractors);
- Future USPS Postal VMF Land Use:
  - Future Commercial/Industrial worker (Postal Service employees and subcontractors);
  - Future Construction Worker;

Off-Site:

- Current/Future Residential Land Use:
  - Current/Future Residential receptor;
  - Future Construction Worker;

- Current/Future Commercial/Industrial Land Use:
  - Future Commercial/Industrial worker; and
  - Future Construction Worker.

6.3 Exposure Points and Routes

Based on the contaminants, affected media, and migration pathways discussed above, points of potential human contact with site-related contaminants include primary environmental media (soil, soil vapor, and groundwater) and secondary media (related to one or more primary media, including ambient and indoor air).

Soil
Potential exposure routes associated with contaminants in soil include direct and indirect exposure routes. Direct exposure routes include incidental ingestion, dermal contact, and inhalation of airborne particulates. Indirect exposure routes include inhalation of volatile contaminants migrating from soil to indoor or ambient air.

Groundwater
Potential exposure routes associated with contaminants in groundwater include direct and indirect exposure routes. Direct exposure routes include incidental ingestion and dermal contact. Indirect exposure routes include inhalation of volatile contaminants migrating from groundwater to indoor or ambient air.

Soil Vapor
Potential exposure routes associated with contaminants in soil vapor (from soil and groundwater sources) include indirect routes when volatile contaminants volatilize to indoor or ambient air.

6.4 Exposure Pathways

Given the characteristics of the contaminants and release processes, this section describes the potential exposure pathways for each receptor for on-site and off-site current and future land uses. The exposure pathways were evaluated as either:

- Incomplete – there is no possibility for the receptors to come into contact with contaminants via the exposure pathway;
- Complete – it is potentially significant mechanism of exposure; and
- Complete but insignificant – it is not considered to be a significant source of contaminants via the exposure pathway.

The potential receptor evaluation is shown on Figure 9.

On-Site
On-site current and future commercial/industrial workers direct exposure to soil (incidental ingestion, dermal contact, and inhalation of airborne particulates) is considered incomplete because the Site is paved with asphalt and concrete and will likely remain paved in the future. Current and future commercial/industrial workers indirect exposure to impacted soil via vapor intrusion to indoor and ambient air is considered complete but insignificant because the area of the Site that was impacted with historic releases will remain an active fueling facility. Also, the maximum detected concentration of benzene remaining in soil (0.15 mg/Kg) is two orders of magnitude lower than the SWRCB's *Low-Threat Underground Storage Tank Case Closure Policy* adopted May 1, 2012, Table 1 commercial/industrial volatilization to outdoor air (5 to 10 feet bgs) value of 12 mg/Kg (SWRCB, 2012). Table 1 of the *Low-Threat Underground Storage Tank Case Closure Policy* is reproduced as Table 7 in this report.

On-site future construction worker direct and indirect exposures to soil are considered complete but insignificant. The concentrations of BETX, MTBE, and TPHg remaining in soil are lower than the SWRCB's San Francisco Bay May 2013 ESLs residential values. Only one samples out of 25 samples analyzed for TPHd exceeded the ESLs, and two samples out of 20 samples analyzed for TRPH exceeded the ESLs. Future construction worker direct and indirect exposures to groundwater are considered complete but insignificant because concentrations of impacted groundwater are isolated to the fuel pump area, and the down-gradient well (MW-6) is below the ESL established for groundwater that is a current or potential drinking water resource.

Off-Site
Off-site current and future residential receptors and construction workers direct and indirect exposure to soil and groundwater are considered incomplete because the contaminated media has not migrated off-site and is isolated to the Site at the VMF.

7.0 DATA GAPS ANALYSIS

A soil vapor survey has not been conducted at the Site; however, the potential risk associated with on-site workers exposed to contaminants in the soil vapor is expected to be minimal due to the Site remaining an active fueling facility. As discussed in Section 6.4, the maximum detected concentration of benzene remaining in soil is two orders of magnitude lower than the SWRCB's Table 1 commercial/industrial volatilization to outdoor air (5 to 10 feet bgs) value of 12 mg/Kg (SWRCB, 2012). Also, the BTEX concentrations in groundwater have been non-detect for the last four sampling events, and MTBE has been non-detect or below the ESL for the last four sampling events. No other data gaps have been identified for the Site.

8.0 REQUEST FOR CLOSURE

Based on the results of past environmental investigations, and review of current Site conditions, no further action is warranted at this Site. TRC recommends that the Site be granted environmental case closure under the *Low-Threat Underground Storage Tank Case Closure Policy* (SWRCB, 2012).

8.1 Low-Threat Closure Criteria Review

The Site meets the criteria for Low-Threat Underground Storage Tank Case Closure as outlined in the following two sections. The specific criteria outlined in the policy are presented in italics, followed by the supporting response.

8.1.1 General Criteria

a. The unauthorized release is located within the service area of a public water system.

The Site is located within the service area of the East Bay Municipal Utility District.

b. The unauthorized release consists only of petroleum.

The former release consists of gasoline, diesel, motor oil, and fuel oxygenates.

c. The unauthorized release has been stopped.

The USTs and hydraulic lifts that were the source of the release have been removed from the Site.

d. SPH has been removed to the maximum extent practicable.

Measureable SPH has not been observed in Site monitoring wells for more than one year (since February 2012).

e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed.

A CSM is included in this report in Section 6, Table 1, and Figure 9. The supporting data and analysis used to develop the CSM (source and attributes of release, description of affected media, local geology and hydrogeology and other physical site characteristics, and identification of all confirmed or potential receptors) are contained in multiple Site reports and have been summarized in this report. Additionally, information regarding the Site geology and hydrogeology and a sensitive receptor survey are presented in Sections 2.2 and 5.0 of this report.

f. Secondary source has been removed to the extent practical.

Secondary source removal was conducted during the excavation of Site USTs and when impacted soil was removed from the Site. In addition, impacted soil from hydraulic lifts was further characterized and revealed that the impacts from the leaking hydraulic lifts were limited to the area immediately surrounding the lifts, with no significant migration of contaminants.

g. Soil and groundwater have been tested for MTBE and results reported in accordance with Health and Safety Code section 25296.15.

Soil and groundwater samples collected during Site investigations and groundwater monitoring events were analyzed for MTBE and other fuel oxygenates, and the results have been reported to the ACDEH. A summary of current and historical soil and groundwater analytical data are provided in Table 3 and Appendix A, table A-1.

h. Nuisance as defined by Water Code section 13050 does not exist at this site.

No nuisances meeting the Water Code criteria exist at the Site.

8.1.2 Media-Specific Criteria

To qualify for low-threat closure under the policy, sites must meet criteria for groundwater, petroleum vapor intrusion to indoor air, and direct contact and outdoor air exposure. The Site meets the media-specific criteria as outlined below.

1. Groundwater

   The new policy allows for closure of sites that have not attained background water quality conditions, but where it can be expected that these objectives "will be met through natural attenuation within a reasonable time" and meets all the criteria of the site class as defined in the policy. The Site meets groundwater-specific criteria for Class 3, described below:

   a. The contaminant plume that exceeds water quality objectives is less than 100 feet in length.

   The length of the TPHd plume beneath the Site is approximately 85 feet.

   b. Free product has been removed to the maximum extent practicable, may still be present below the site where the release originated, but does not extend off-site.

   Historically, measureable SPH has been detected at the Site. The maximum SPH was observed in February 2012 at MW-4 with a measured thickness of 0.96 inches. During the most recent sampling event in April 2013, a sheen was observed in several monitoring wells including MW-4. However, no SPH has been observed in the furthest down-gradient well MW-6 since the well was initially monitored in 2002, indicating that it is likely the free product does not extend off-site. Additionally, no measureable SPH has been detected in site monitoring for over a year.

   c. The plume has been stable or decreasing for a minimum of five years.

   Dissolved phase concentrations of TPHd have been on an overall decline since the maximum concentration of TPHd was detected in MW-4 at 235,000 µg/L in June 2002. Dissolved phase concentrations of TPHg have been on a general decline since 1995 when the maximum concentration was detected in MW-4 at 24,000 µg/L.

   d. The nearest existing water-supply well or surface body of water is greater than 1,000 feet from the defined plume boundary.

   Information provided by the ACPWA and SWRCB confirms that there are no active domestic and municipal-water supply wells within 1,000-feet of the Site. The Oakland Inner Harbor is the nearest water body and it is located over 1,000 feet south of the Site (Google Earth, 2013).

   e. The property owner is willing to accept a land use restriction if the regulatory agency requires a land use restriction as a condition of closure.

   USPS is prepared to accept land use restrictions as a condition of closure.

2. Petroleum Vapor Intrusion to Indoor Air

   The low-threat vapor intrusion criteria applies to sites where (1) existing buildings are occupied or may be reasonably expected to be occupied in the future, or (2) buildings for human occupancy are reasonably expected to be constructed in the near future. Currently,

the Site is an active fueling facility. Exposures to petroleum vapors associated with historical-fuel system releases are comparatively insignificant relative to exposures from small surface spills and fugitive vapor releases that typically occur at active fueling facilities. Therefore, adherence to the media-specific criteria for petroleum vapor intrusion to indoor air is not required at active commercial petroleum fueling facilities, except in cases where release characteristics can be reasonably believed to pose an unacceptable health risk.

The Tier II HHRA (Lowney, 1999) indicated that the estimated maximum carcinogenic risk associated with vapor intrusion due to volatilization of benzene from shallow groundwater and soil was 2.1 E-06, which is lower than the acceptable target risk of 1E-05 for a commercial/industrial worker. In addition, as stated in Section 6.4 and presented in Table 7 the maximum detected concentration of benzene remaining in soil (0.15 mg/Kg) is two orders of magnitude lower than the SWRCB's volatilization threshold of 12 mg/Kg (SWRCB, 2012).

3. Direct Contact and Outdoor Air Exposure

The media-specific criteria for direct contact and outdoor air exposure states that sites must meet one of three conditions to be considered a low risk to human health. The Site meets condition "a", whereby maximum concentrations of petroleum constituents in soil are lower than or equal to the threshold values specified in Table 1 of the policy, which is reproduced in Table 7 of this report. A column titled "Site" has been added to the table indicating the maximum concentration of hydrocarbons detected in soil.

Maximum concentrations detected in historic soil samples collected from 0 to 10 feet bgs include 0.15 mg/Kg benzene (soil sample B-8 at depth of 6-6.5 feet bgs) and 2.1 mg/Kg ethylbenzene (soil sample B-8 at depth of 6-6.5 feet bgs). No historical records were available to indicate that soil samples have been analyzed for naphthalene; however, naphthalene has been sampled routinely in groundwater as part of the monitoring program. Monitoring wells MW-1 through MW-3 and MW-6 have not reported naphthalene concentrations above the laboratory reporting limits. Monitoring well, MW-4 has not reported naphthalene concentrations above the reporting limit for the most recent sampling events in February 2012, August 2012 and April 2013. Monitoring well MW-5 was not sampled for naphthalene prior to its destruction in 1995. Although naphthalene has not been analyzed in soil, generally low hydrocarbon concentrations in historical soil samples (with the exception of B-8) indicate naphthalene is unlikely to be present in soil. Per the policy, analysis for PAHs is not required unless the site is affected by either waste oil or Bunker C fuel. Waste oil or Bunker C fuel has not been used or observed on-Site; therefore, analysis of PAHs is not warranted.

The direct contact exposure point is incomplete for the on-site commercial worker as the source areas are paved. However, direct exposure to groundwater, soil and soil vapors could occur for construction and utility workers involved in subsurface excavation activities to upgrade or maintain existing utilities or future construction activities. In the event that foundation work is performed within the source area, exposure to groundwater, soil and soil vapor is expected to be insignificant given the concentrations present on-site.

8.1.3 Conclusion

The Site conditions meet the General Criteria and Media-Specific Criteria of the *Low-Threat Underground Storage Tank Case Closure Policy* indicating that case closure is warranted. TRC respectfully requests ACDEH to evaluate the Site for closure based on the reasons listed above.

9.0 LIMITATIONS

This report was prepared for the use of the USPS in evaluating groundwater quality at selected on-site locations at the time of this study. We make no warranty, expressed or implied, except that our services have been performed in accordance with environmental principles generally accepted at this time and location. The chemical and other data presented in this report can change over time and are applicable only to the time this study was performed. We are not responsible for the data presented by others.

10.0 REFERENCES

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TABLES

TABLE 1
Conceptual Site Model
USPS Oakland VMF
Oakland, CA

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
Geology and Hyrdogeology	Regional	The Site lies within the East Bay Plain Subbasin of the Santa Clara Valley Groundwater Basin Hydrologic Basin. This basin is a northwest trending alluvian plain dominated by the Santa Clara, Alameda, and Temescal Formations of Early Pleistocene to Early Holocene time, and artificial fill. The unconsolidated sediments include alluvial fan deposits interfingered with lake, swamp, river channel, and flood plain deposits; alluvial fan deposits bounded by mud deposits; and silts and clays with gravel layers.	None	NA
	Site	***Geology:*** The Site is located at approximately 14 feet above mean sea level (msl; GoogleEarth) with a relatively flat topography. The soils beneath the Site consist primarily of medium dense to dense silty and clayey fine sands (Geo Resource Consultants Inc.,1993), from the Early Holocene Temescal Formation (California Department of Water Resources Groundwater Bulletin 118, Santa Clara Valley Groundwater Basin, East Bay Plain Subbasin). ***Hydrogeology:*** Groundwater at the Site has historically occurred at depths ranging from approximately 3.5 to 15.0 feet below ground surface (bgs), and groundwater flow has been primarily to the southwest.	None	NA
Source Evaluation	Release Mechanisms	Petroleum products leaked from five former USTs and three hydraulic lifts into underlying soil and into the vadose zone, and then into groundwater via percolation and infiltration. The release of hydrocarbons is likely from three former USTs that were located adjacent to the current fuel dispensers and the three hydraulic lifts that were located inside the vehicle maintenance facility (VMF). Soil sampling indicated that petroleum hydrocarbons were detected below the USTs and hydraulic lifts. Petroleum products leaked from the former UST and hydraulic lifts into underlying soil and into the vadose zone, and then into groundwater via percolation and infiltration. Petroleum hydrocarbons may partition in the vadose zone between the liquid and gas phase. Petroleum hydrocarbons in the subsurface may be dissolved in the soil moisture or adsorbed onto soil particles and organic matter.	None	NA
	Historical Conditions	Several phases of investigations have been conducted at the Site since the removal of the underground storage tanks (USTs) in 1991. Site investigation and remediation activities conducted to date focused on investigation and remediation associated with the UST removals and hydraulic lifts. Details of previous Site investigations are briefly summarized below. A more compressive discussion of the previous site investigations and remediation activities is provided in Section 3.0 of the report. In November 1991, one 750-gallon waste-oil underground storage tank (UST), one 5,000-gallon gasoline UST, and two 10,000-gallon diesel USTs were removed from the Oakland VMF (Site); an additional 10,000-gallon diesel UST was removed from the site in June 1992. Strong hydrocarbon odors and visible contamination were present within the UST pit excavations, and a small hole in the bottom of the gasoline UST was identified during removal. Following the removal of the USTs, three new 12,000-gallon USTs (one gasoline and two diesel) were installed near the southwest corner of the USPS parking garage, and one new 1,000-gallon waste-oil aboveground storage tank (AST). Later in 1992, additional hydrocarbon-impacted soil was removed from the Site near the location of two former diesel USTs (PSI, 2002). In September 1993, Harding Lawson Associates (HLA) performed a subsurface investigation in which nine soil borings were drilled, and 25 soil samples were collected and analyzed for total petroleum hydrocarbons as diesel (TPHd), gasoline (TPHg), benzene, toluene, ethylbenzene, and xylenes (collectively known as BTEX compounds). Five of the drilled borings were converted to groundwater monitoring wells (MW-1 through MW-5) which were completed to a depth of 20 feet bgs. Elevated concentrations of TPHd, TPHg, benzene, toluene, ethylbenzene , and xylenes were detected in soil collected at 3 feet beneath the former fuel dispenser island from several soil boring including B-4 (now monitoring well MW-4). No other petroleum hydrocarbons were	None	NA

TABLE 1
Conceptual Site Model
USPS Oakland VMF
Oakland, CA

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
		detected in the other groundwater samples collected during the investigation. In 1997, Herbst Engineering removed three hydraulic lifts within the VMF building. During the removal, Herbst Engineering contracted JB Environmental to characterize and dispose of the observed soil contamination in these hydraulic lift areas. Investigations revealed that the impacts from the leaking hydraulic lifts were limited to the area immediately surrounding the lifts, with no significant migration of contaminants. Quarterly groundwater monitoring was initiated at the site in January 1994 at the five wells. However, by December 1994, construction of Interstate 880 in the vicinity of the site (Cypress Freeway Reconstruction Project) required the removal of monitoring well MW-5. ACDEH approved the abandonment of well MW-5, which was located up-gradient of the UST removal areas and had been non-detect for petroleum hydrocarbons since being installed in 1993. TPHd concentrations in wells MW-1, MW-2, MW-3 and MW-4 showed an increase during June 1994 to June 1995. In June 1995, SPH was discovered in well MW-4 and removed with absorbent socks and bailers. In March 2002, TPHd was detected in MW-3 and MTBE was detected in MW-3 and MW-4. In September 2002, PSI installed monitoring well MW-6 approximately 60 feet down-gradient of wells MW-3 and MW-4 per ACDEH request to delineate the plume down-gradient of the fuel island. During the first semi-annual groundwater monitoring event of 2012, dissolved phase concentrations of TPHg and TPHd detected in monitoring well MW-4 exceeded the ESL for TPHg and middle distillates. During the second semi-annual 2012 monitoring event, SPH had not been detected in well MW-4 for six months, and the concentrations of TPHg and TPHd had decreased significantly. TPHmo was detected in well MW-4; TPHg and TPHd were not detected from groundwater samples in the other wells. BTEX and other fuel oxygenates were also not detected above laboratory reporting limits. MTBE was detected, however, well below the groundwater ESL.		
	Current Conditions	***Soil:*** There are two areas at the Site where detectable concentrations of contaminants remain. The first area is where the main source of groundwater contamination is located. Three borings of the nine HLA installed in September 1993 had detectable concentrations of TPHd, TPHg, and BTEX in soil located by monitoring wells MW-2 through MW-4. The second area is the location of the former hydraulic lifts. Soil below two of the three hydraulic lifts yielded high concentrations of TRPH and trace detections of BTEX. The follow-up soil and groundwater investigation revealed that the impacts from the leaking hydraulic lifts were limited to the area immediately surrounding the lifts, with no significant migration of contaminants. ***Groundwater:*** During the most recent sampling event (April 2013), concentrations of TPHd and TPHmo were detected in groundwater from well MW-4 and TPHg decreased below the ESL of 100 µg/L; TPHmo was detected in well MW-2; and TPHd was detected in low concentrations in wells MW-1, MW-2, and MW-3, and was detected below the ESL in well MW-6. BTEX and other fuel oxygenates were not detected above laboratory reporting limits. MTBE was detected in groundwater from wells MW-3, MW-4, and MW-6, but were well below the groundwater ESL of 5 µg/L.	None	NA
Neighboring Sites		There are seven environmental cleanup sites located within a half a mile radius of the Site. Five environmental cleanup sites are identified as active on SWRCB's GeoTracker, DTSC's Envirostor, and USEPA's Pacific Southwest Superfund Sites. Four of the five sites are located cross gradient of the Site, and one is located upgradient of the Site. These five sites are identified on Figure 7. Further details regarding adjacent sites are included in Section 4.0 of the report.	None	NA

TABLE 1
Conceptual Site Model
USPS Oakland VMF
Oakland, CA

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
		Based on the distance, direction, level of contamination present and/or protective measures in place at these sites, it is unlikely that soil, soil vapor and groundwater contaminants originating from these locations would migrate to the Site		
Transport Media		Transport media at the Site includes air, soil, soil vapor, and groundwater. Surface water has not been included as transport media due to the lack of surface water at or near the Site. In addition, the Site is presently developed as a USPS VMF and GMF with minimal landscaping and vegetation. As such, biotic uptake of contaminants has also been eliminated as a potential transport medium. ***Air:*** Transport through air occurs when impacted surface soil particles are picked up and carried by the wind. Subsurface soil particles can also be released into the air during excavation or grading activities. ***Soil:*** Transport of contaminants in soil occurs through leaching of liquid through pore spaces and volatilization of liquid into the gas phase. Contaminants that are highly soluble tend to percolate through soils quickly, such as MTBE and those that are less soluble, including TPHg and BTEX compounds; tend to reside in soils for longer periods of time. In addition, impacted soil may be distributed into non-impacted areas through construction activities such as excavation and grading. ***Soil Vapor:*** Lateral and vertical migration of soil vapor in the vadose zone follows the path of least resistance, through coarser grained soils (i.e., sand lenses), utility corridors, and fractures. Vapors flow under the processes described as advection, diffusion, and dispersion; however, dispersion in the vapor phase is generally considered negligible compared to transport through advection and diffusion processes. Transport of soil vapor is influenced by a number of factors, including density, temperature, pressure, and concentration gradients. Density gradients occur when the contaminant is several times denser than ambient air, and generally only applies to soil vapor within coarse sediment. Thermal gradients typically only influence the migration of soil vapor near the surface, with the transport occurring from warmer to cooler areas. Changes in barometric pressure may influence vapor transport in the subsurface, although the effect is generally minimal. Molecular diffusion due to concentration gradients within soil vapor is the primary mechanism for transport of contaminants in soil vapor. ***Groundwater:*** Once in groundwater, contaminants migrate under the processes of advection and dispersion, and, to a lesser degree, molecular diffusion. The primary mode of transport is advection, which is influenced by the aquifer material properties and hydraulic gradient. Dispersion also occurs as contaminant ions travel through various paths in the downgradient, vertical and lateral direction, causing the contaminants to spread out. Molecular diffusion involves the movement of ions from high to low concentrated areas.	None	NA
Sensitive Receptors	Water Supply Wells	According to the Alameda County Public Works Agency (ACPWA) well search data, there are no portable water supply wells within a ½ mile radius of the Site. A search using the SWRCB's Geotracker database also confirms that there are no water supply wells within 0.5-mile radius of the Site. However, while conducting investigation activities at the AMCO Superfund Site, CH2M Hill discovered one well at the residence adjacent to the former AMCO facility (approximately 0.33 miles from the Site; CH2M Hill, 2011). The well was 3.25 feet in diameter and 9.3 to 10 feet deep, with an uneven gravel-filled bottom. CH2M Hill observed that the well was brick-lined and appeared hand-dug. No records of this well exist. Given the construction of this well, it is assumed that it is relatively old and likely constructed prior to government	None	NA

TABLE 1
Conceptual Site Model
USPS Oakland VMF
Oakland, CA

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
		permitting or records. CH2M Hill inferred that the well was used for backyard irrigation and other non-potable uses. Based on the depth and construction of this well it is concluded that it is not a source of drinking water.		
	Surface Bodies of Water	The nearest surface water is the Oakland Inner Harbor, which is also known as the Oakland estuary. It is located approximately 0.83 miles south of the Site as indicated in Figure 8. The Oakland Inner Harbor is the strait of water that separates the cities of Oakland and Alameda, California. The Oakland Inner Harbor extends from the San Francisco Bay to the west down to the San Leandro Bay to the southeast, which is connected to the San Francisco Bay. Lake Merritt also flows into Oakland Inner Harbor.	None	NA
	Schools	There are two schools within 0.5-mile radius of the Site, Prescott Elementary School and Saint Patrick School. Both schools are greater than 1,000 feet from the Site. Prescott Elementary School is located approximately 0.32 miles northeast of the Site, and Saint Patrick School is located approximately 0.38 miles northeast of the Site (ACEH GIS, 2013).	None	NA
	Other Public Areas	Public use areas other than schools within a 0.5-mile radius of the Site include one park, South Prescott Park, and two religious centers, Church of the Living God Faith and St Patrick Catholic Church (Google Earth, 2013). South Prescott Park is located adjacent to the Site to the southeast. Church of the Living God Faith is cross-gradient approximately 0.15 miles southeast of the Site located at 310 Peralta Street. St Patrick Catholic Church is up-gradient approximately 0.36 miles northeast of the Site located at 1023 Peralta Street.	None	NA
Exposure Pathways		Exposure to contaminants can occur through inhalation of particulates, inhalation of indoor and ambient air via vapor intrusion, dermal absorption of soil or groundwater, and incidental ingestion of soil or groundwater. The potential receptors that may come in contact with the contaminated media through one or more of the exposure pathways include on-site current and future commercial/industrial worker (i.e. Postal Service employees and subcontractors), future on-site construction worker, and current and future off-site residential receptors. ***On-Site:*** On-site current and future commercial/industrial workers direct exposure to soil (incidental ingestion, dermal contact, and inhalation of airborne particulates) is considered incomplete because the site is paved with asphalt and concrete and will likely remain paved in the future. Current and future commercial/industrial workers indirect exposure to impacted soil via vapor intrusion to indoor and ambient air is considered complete but insignificant because the area of the Site that was impacted with historic releases will remain an active fueling facility. Also, the maximum detected concentration of benzene remaining in soil (0.15 mg/kg) is two orders of magnitude lower than the SWRCB's *Low-Threat Underground Storage Tank Case Closure Policy* adopted May 1, 2012 Table 1 commercial/industrial volatilization to outdoor air (5 to 10 feet bgs) value of 12 mg/kg (SWRCB, 2012). On-site future construction worker direct and indirect exposures to soil are considered complete but insignificant. The concentrations of BETX, MTBE, and TPHg remaining in soil are lower than the SWRCB's San Francisco Bay May 2013 Environmental Screening Levels (ESLs) residential values. One of two samples detected out of 25 samples analyzed for TPHd exceeded the ESLs, and two of five samples detected out of 20 samples analyzed for TRPH exceeded the ESLs. Future construction worker direct and indirect exposures to groundwater are considered complete but insignificant because concentrations of impacted groundwater is isolated to the fuel pump area and the downgradient well (MW-6) is below the ESL established for groundwater is a current or potential drinking water resource. ***Off-Site:*** Off-site current and future residential receptors and construction workers direct and indirect exposure	None	NA

TABLE 1
Conceptual Site Model
USPS Oakland VMF
Oakland, CA

CSM Element	CSM Sub-Element	Description	Data Gap	How to Address
		to soil and groundwater are considered incomplete because the contaminated media has not migrated off-site and is isolated to the Site at the VMF.		
Data Gap Analysis		A soil vapor survey has not been conducted at the Site; however, the potential risk associated with on-site workers exposed to contaminants in the soil vapor is expected to be minimal due to the Site remaining an active fueling facility. As discussed in Section 5.5, the maximum detected concentration of benzene remaining in soil is two orders of magnitude lower than the SWRCB's Table 1 commercial/industrial volatilization to outdoor air (5 to 10 feet bgs) value of 12 mg/kg (SWRCB, 2012). Also, the BTEX concentrations in groundwater have been non-detect for the last four sampling events, and MTBE has been non-detect or below the ESL for the last four sampling events.	None	NA

TABLE 2
Groundwater Elevation in Site Wells
USPS Oakland VMF
Oakland, CA

Monitoring Well	Latitude+	Longitude+	Date	Top of Casing Elevation (feet msl)	Depth to Groundwater ** (ft bgs)	Groundwater Elevation (feet msl)	Groundwater Flow Direction
MW-1	37°48'19.16"N	122°18'6.01"W	4/15/2013	11.44	6.61	4.83	S50°W
MW-2	37°48'18.84"N	122°18'5.74"W	4/15/2013	12.06	7.18	4.88	S50°W
MW-3	37°48'18.64"N	122°18'6.54"W	4/15/2013	12.48	8.12	4.36	S50°W
MW-4	37°48'18.50"N	122°18'6.15"W	4/15/2013	12.83	8.31	4.52	S50°W
MW-6	37°48'18.08"N	122°18'6.73"W	4/15/2013	11.93	7.98	3.95	S50°W

Notes

** = Measured from the top of the casing.

\+ = Monitoring wells were resurveyed on January 10, 2011 in accordance to the State of California Geotracker requirements using the North American Datum 1983.

TOC = top of casing (from PSI 2002)

ft bgs = feet below ground surface

feet msl = feet mean sea level

TABLE 3

Historical Analytical Results of Soil after UST Removals

USPS Oakland VMF

Oakland, CA

Sample ID	Sample Depth (feet)	TRPH (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylene (mg/kg)
Monitoring Well Installations								
MW-1	5.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-1	8.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-2	2.5-3.0	--	<10	<1.0	0.040	<0.003	<0.003	<0.003
MW-2	7.0-7.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-2	8.5-9.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-3	3.0-3.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-3	7.0-7.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-3	9.0-9.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-4	3.0-3.5	--	2,400	53	<0.15	<0.15	<0.15	0.087
MW-4	7.0-7.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-4	9.0-9.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-5	3.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-5	6.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
MW-5	9.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
Subsurface Site Investigation, 1993								
B-6	3.0-3.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-6	7.0-7.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-6	11.0-11.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-7	4.5-5.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-7	5.0-5.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-7	10.0-10.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-7	13.5-14.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-8	6.0-6.5	--	84	180	0.15	0.35	2.1	13
B-8	9.0-9.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-8	9.0-9.5	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
B-9	10.5-11.0	--	<10	<1.0	<0.003	<0.003	<0.003	<0.003
Hydraulic Lift Removal, August 1999								
EB-1	10.5	22,000	--	--	<0.005	0.0063	0.012	0.045
EB-2	9.0	35	--	--	<0.005	<0.005	<0.005	<0.005
EB-3	9.0	48,000	--	--	0.034	0.21	0.03	0.16

TABLE 3

Historical Analytical Results of Soil after UST Removals

USPS Oakland VMF

Oakland, CA

Sample ID	Sample Depth (feet)	TRPH (mg/kg)	TPHd (mg/kg)	TPHg (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylene (mg/kg)
Monitoring Well Installations								
EB-4	13.0	90	--	--	<0.005	<0.005	<0.005	<0.005
EB-5	7.5	<25	--	--	<0.005	<0.005	<0.005	<0.005
EB-6	12.0	37	--	--	<0.005	<0.005	<0.005	<0.005
Hydraulic Lift Removal, March 2000								
EB-7	7.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-7	10.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-8	7.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-8	10.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-9	9.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-9	12.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-10	7.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-10	10.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-11	7.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-11	10.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-12	7.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-12	9.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-13	7.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
EB-13	9.5	<50	--	--	<0.005	<0.005	<0.005	<0.005
Soil ESLs [1]		--	100	100	0.044	2.9	3.3	2.3

Notes

TRPH

TPHg = Total petroleum hydrocarbons as gasoline

TPHd = Total petroleum hydrocarbons as diesel

mg/kg = milligrams per kilogram

[1] = Environmental Screening Level, CRWQCB, SF Bay Region, rev. May 2013.

TABLE 4
Current Groundwater Analytical Results
USPS Oakland VMF
Oakland, CA

(concentrations in micrograms per liter [µg/L])

Well No.	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl-benzene	Xylenes	MTBE	TBA	DIPE	ETBE	TAME	1,2-DCA	Naphthalene
MW-1	4/15/2013	<50	**110**	<100	<0.5	<0.5	<0.5	<1.0	<0.5	<4.0	<0.5	<0.5	<0.5	<0.5	<1.0
MW-2	4/15/2013	<50	**170**	**390**	<0.5	<0.5	<0.5	<1.0	<0.5	<4.0	<0.5	<0.5	<0.5	<0.5	<1.0
MW-3	4/15/2013	<50	**240**	<100	<0.5	<0.5	<0.5	<1.0	1.9	<4.0	<0.5	<0.5	<0.5	<0.5	<1.0
MW-4	4/15/2013	83	**2,500**	**210**	<0.5	<0.5	<0.5	<1.0	2.2	< 4.0	<0.5	<0.5	<0.5	<0.5	<1.0
MW-6	4/15/2013	<50	73	<100	<0.5	<0.5	<0.5	<1.0	0.81	<4.0	<0.5	<0.5	<0.5	<0.5	<1.0
Groundwater ESL [(1)]		100	100	100	1	40	30	20	5	12	NE	NE	NE	200	24
MCL[(2)]		NE	NE	NE	1	150	300	1,750	13	NE	NE	NE	NE	0.5	NE

Notes

(1) = Environmental Screening Level-Table A, CRWQCB, SF Bay Region, rev. May 2013.

(2) = Drinking water Maximum Contaminant Levels–California DHS, June 26, 2009

Bold = Compound was detected above one or more of the action levels

µg/L = Micrograms per liter

TPHg = Total petroleum hydrocarbons as gasoline

TPHd = Total petroleum hydrocarbons as diesel

TPHmo = Total petroleum hydrocarbons as motor oil

MTBE = Methyl tert-butyl ether

TBA = Tert-butyl alcohol

DIPE = Di-isopropyl ether

ETBE = Ethyl tert-butyl ether

TAME = tert-amyl Methyl ether

1,2-DCA = 1,2-dichloroethane

< = Indicates that the compound was not detected at or above the stated laboratory reporting limit

NE = not established

TABLE 5
Current Groundwater
Field-Measured Parameters
USPS Oakland VMF
Oakland, CA

Well No.	Date	pH	Specific Conductivity	Temperature	Dissolved Oxygen	Oxidation Reduction Potential
			(µS/cm)	(°C)	(mg/L)	(mV)
MW-1	4/15/2013	6.57	2079	15.98	1.34	275.5
MW-2	4/15/2013	6.37	1781	15.27	1.69	246.4
MW-3	4/15/2013	6.81	2028	15.88	1.78	248.4
MW-4	4/15/2013	6.47	1735	16.85	1.04	-15
MW-6	4/15/2013	6.38	1074	19.05	1.4	242.8

Notes
mg/L = milligrams per liter
mV = millivolts
µS/cm = microSiemens per centimeter
°C = degree Celsius

TABLE 6
Field Observations of Sheen and SPH within Groundwater
USPS Oakland VMF
Oakland, CA

Monitoring Well	Date	Top of Casing Elevation * (feet msl)	Depth to Groundwater ** (ft bgs)	Sheen Observed	Observed Product Thickness (inches)
MW-1	1/3/2011	11.44	5.98	Y	--
MW-1	2/15/2012	11.44	7.67	N	--
MW-1	8/15/2012	11.44	7.4	N	--
MW-1	4/15/2013	11.44	6.61	N	--
MW-2	1/3/2011	12.06	6.75	Y	--
MW-2	2/15/2012	12.06	8.24	Y	--
MW-2	8/15/2012	12.06	7.98	N	--
MW-2	4/15/2013	12.06	7.18	N	--
MW-3	1/3/2011	12.48	7.68	Y	--
MW-3	2/15/2012	12.48	9.2	Y	--
MW-3	8/15/2012	12.48	8.89	Y	--
MW-3	4/15/2013	12.48	8.12	Y	--
MW-4	1/3/2012	12.83	8.12	Y	0.13
MW-4	2/15/2012	12.83	9.47	Y	0.96
MW-4	4/17/2012	12.83	8.51	Y	--
MW-4	5/31/2012	12.83	8.53	Y	--
MW-4	7/24/2012	12.83	9.17	Y	--
MW-4	8/15/2012	12.83	9.14	Y	--
MW-4	1/9/2013	12.83	8.01	Y	--
MW-4	3/26/2013	12.83	9.02	Y	--
MW-4	4/15/2013	12.83	8.31	Y	--
MW-6	1/3/2012	11.93	7.61	N	--
MW-6	2/15/2012	11.93	9.04	N	--
MW-6	8/15/2012	11.93	8.79	N	--
MW-6	4/15/2013	11.93	7.98	N	--

Notes

** = Measured from the top of the casing.

* = Monitoring wells were resurveyed on January 10, 2011 in accordance to the State of California Geotracker requirements using the North American Datum 1983.

-- = no product thickness could be measured

SPH = separate phase hydrocarbons

TOC = top of casing (from PSI 2002)

ft bgs = feet below ground surface

feet msl = feet mean sea level

TABLE 7
Concentrations of Petroleum Constituents in Soil
with No Significant Risk of Adversely Affecting Human Health[1]
USPS Oakland VMF
Oakland, CA

Chemical	Residential		Commercial/ Industrial		Utility Worker	Site[2]
	0-5 fbg mg/kg	Volatilization to outdoor air (5 to 10 fbg) mg/kg	0-5 fbg mg/kg mg/kg	Volatilization to outdoor air (5 to 10 fbg) mg/kg	0 to 10 fbg mg/kg	1 to 10 fbg mg/kg
Benzene	1.9	2.8	8.2	12	14	0.15
Ethylbenzene	21	32	89	134	314	2.1
Naphthalene	9.7	9.7	45	45	219	NA
PAHs	0.063	NA	0.68	NA	4.5	NA

Notes

1 = Criteria establized by State Water Resources Control Board (SWRCB) in the *Low-Threat Underground Storage Tank Case Closure Policy (*SWRCB, May 2012)

2 = maximum concentration collected from soil samples during UST Removal and hydraulic Lift removal

NA = not applicable or not available

mg/kg = milligrams per kilogram

PAHs = polyaromatic hydrocarbons

FIGURES

SOURCE AERIAL PHOTO: Google Earth, August 2012.

N

APPROXIMATE SCALE (FEET)

0 1,000 2,000

VICINITY MAP

United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC 180497.3 **FIGURE 1**

FILE NAME: N:\PROJECTS\CAD\USPS Oakland\Closure Request_Aug13\Fig1_Vicinity Map_REV AUG13.dwg | Layout Tab: 8x11

LEGEND

Approximate locations of:

- Monitoring well
- Tank pit monitoring well

N

SCALE (FEET)

0 200 400

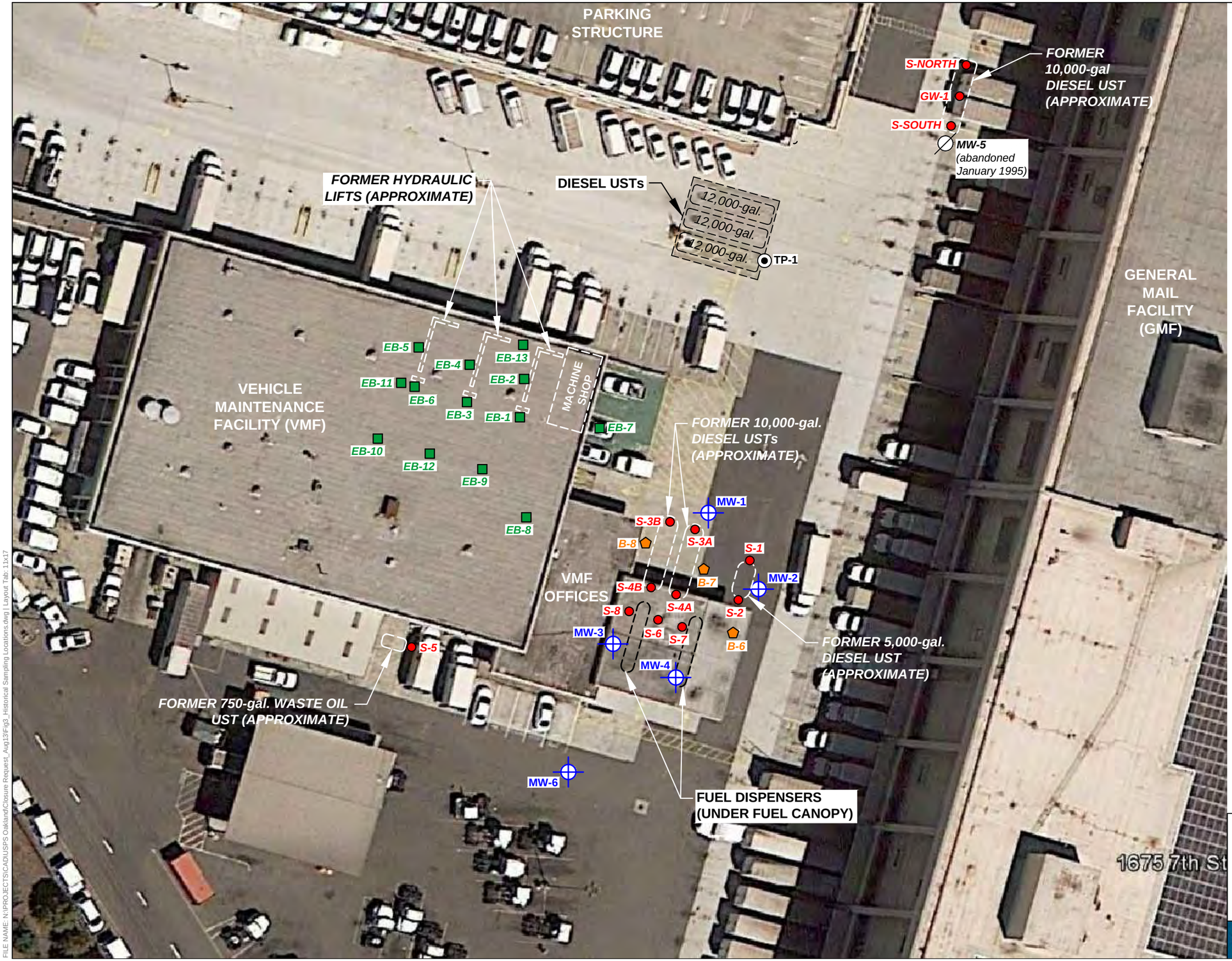
AERIAL PHOTO SOURCE: Google Earth, August 2012.

SITE PLAN

United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC | 180497.3 | **FIGURE 2**

FILE NAME: N:\PROJECTS\CAD\USPS Oakland\Closure Request, Aug13\Fig2_Site Plan_REV AUG13.dwg | Layout Tab: 11x17



LEGEND

Approximate locations of:

- Monitoring well
- Tank pit monitoring well
- Abandoned well
- Soil sample, 1991
- Boring, 1993
- Boring, 1999-2000

N

SCALE (FEET)

0 40 80

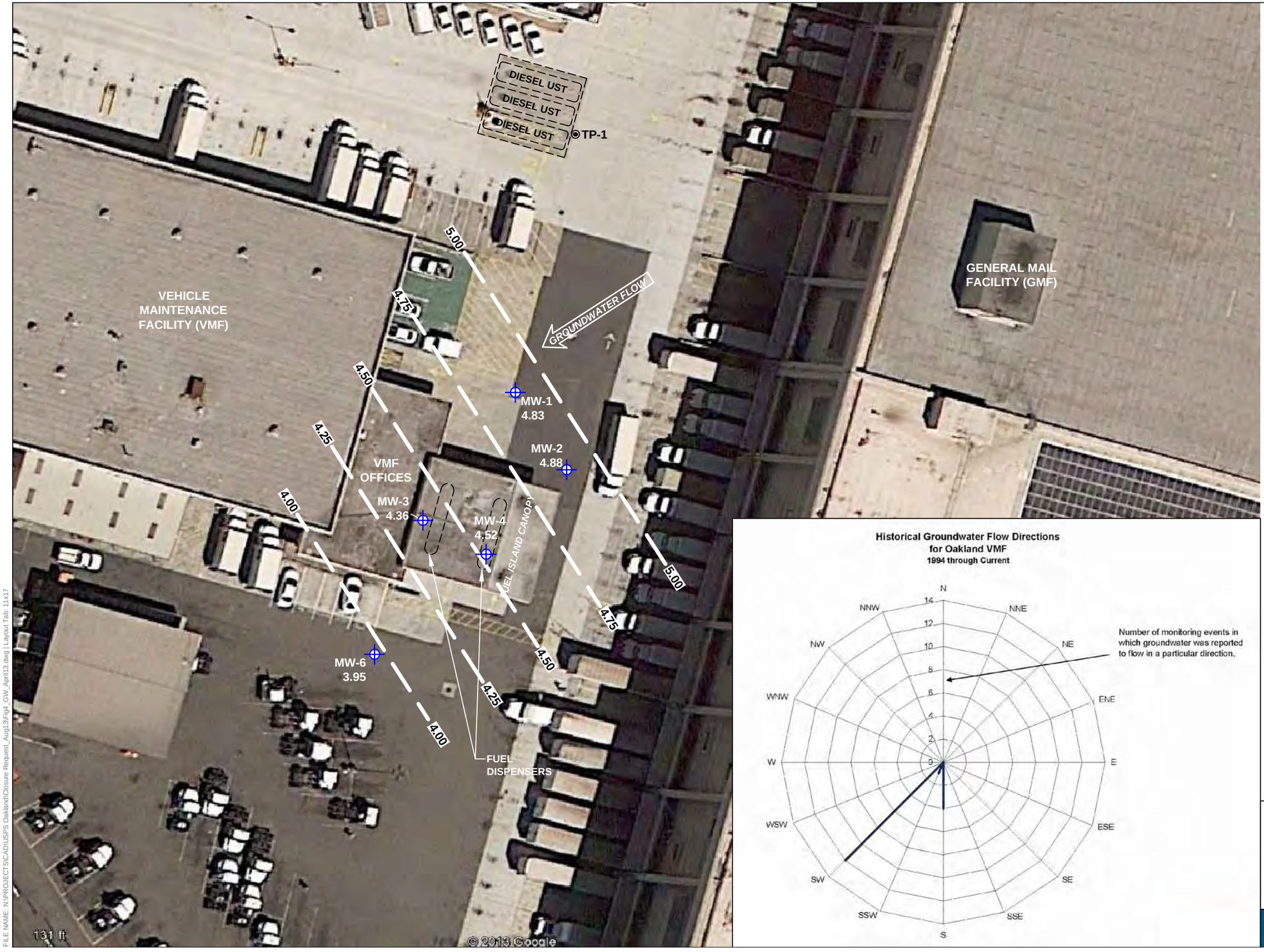
AERIAL PHOTO SOURCE: Google Earth, August 2012.

HISTORICAL SAMPLING LOCATIONS

United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC | 180497.3 | **FIGURE 3**

FILE NAME: N:\PROJECTS\CA\OAK\USPS Oakland\Closure Request_Aug13\Fig3_Historical Sampling Locations.dwg | Layout Tab: 11x17



LEGEND

Approximate locations of:

- Monitoring well
- Tank pit monitoring well
- 4.83 — Groundwater elevation (ft-msl), April 15, 2013
- 5.00 — Groundwater elevation contour line (ft-msl)

N

SCALE (FEET)

0 40 80

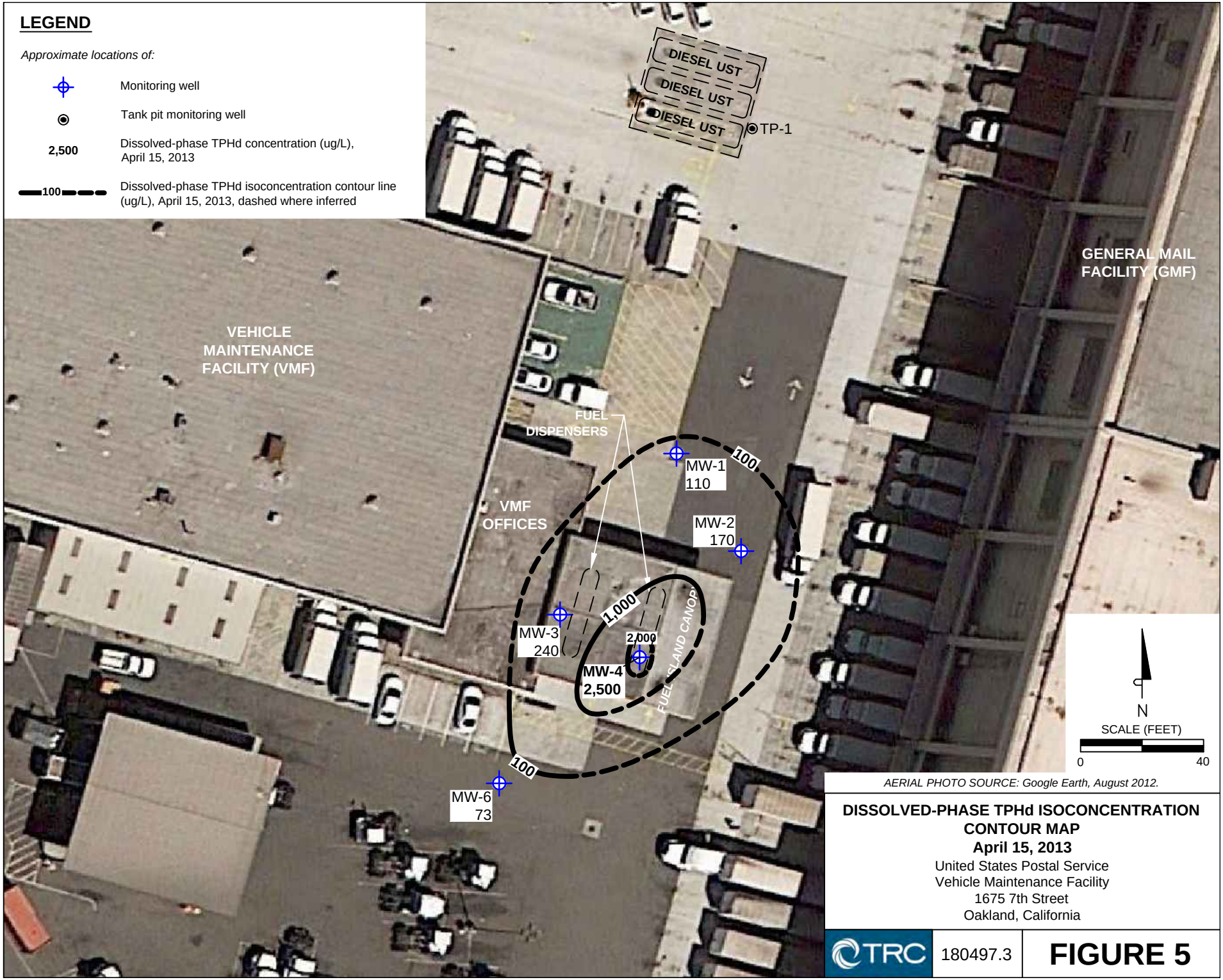
AERIAL PHOTO SOURCE: Google Earth, August 2012.

GROUNDWATER ELEVATION CONTOUR MAP
April 15, 2013

United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC | 180497.3 | **FIGURE 4**

FILE NAME: N:\PROJECTS\CA\OUSPS Oakland\Closure Request_Aug13\Fig4_GW_April13.dwg | Layout Tab: 11x17



AERIAL PHOTO SOURCE: Google Earth, August 2012.

DISSOLVED-PHASE TPHd ISOCONCENTRATION CONTOUR MAP
April 15, 2013
United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC | 180497.3 | **FIGURE 5**

FILE NAME: N:\PROJECTS\CAD\USPS Oakland\Closure Request_Aug13\Fig5_TPHd_April13.dwg | Layout Tab: 8x11

LEGEND

Approximate locations of:

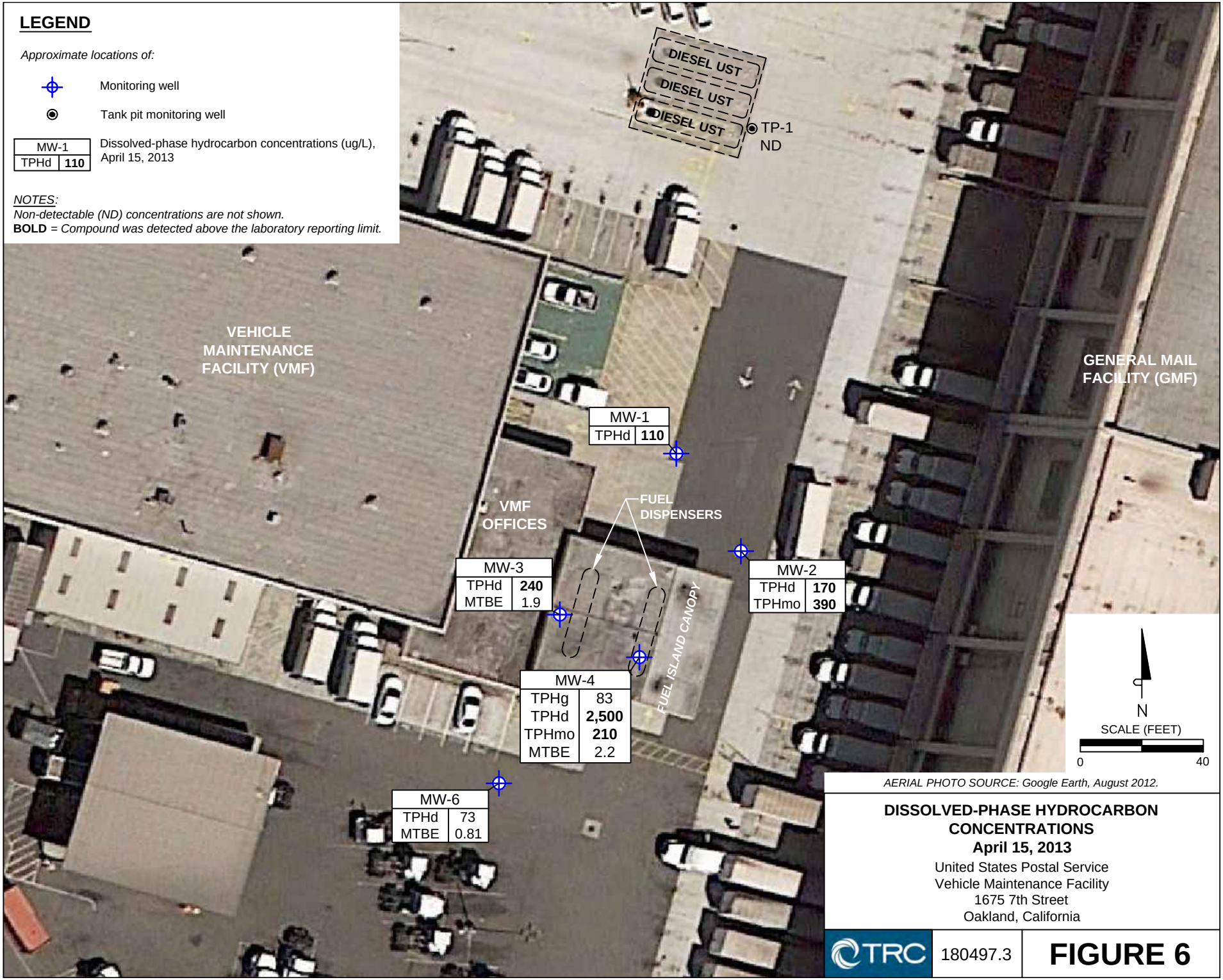
Monitoring well

Tank pit monitoring well

MW-1	
TPHd	**110**

Dissolved-phase hydrocarbon concentrations (ug/L), April 15, 2013

NOTES:
Non-detectable (ND) concentrations are not shown.
BOLD = *Compound was detected above the laboratory reporting limit.*



AERIAL PHOTO SOURCE: Google Earth, August 2012.

DISSOLVED-PHASE HYDROCARBON CONCENTRATIONS
April 15, 2013
United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC | 180497.3 | **FIGURE 6**

FILE NAME: N:\PROJECTS\CAD\USPS Oakland\Closure Request_Aug13\Fig6_Diss-HC_April13.dwg | Layout Tab: 8x11

SOURCE AERIAL PHOTO: Google Earth, August 2012.

LEGEND

Neighboring site

N

APPROXIMATE SCALE (FEET)

0 1,000

NEIGHBORING SITES

United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC | 180497.3 | **FIGURE 7**

FILE NAME: Z:\Current\USPS Oakland\Closure Request_Aug13\Fig7_Neighboring Sites.dwg | Layout Tab: 8x11

SOURCE AERIAL PHOTO: Google Earth, August 2012.

LEGEND

Sensitive receptor

N

APPROXIMATE SCALE (FEET)

0 1,000

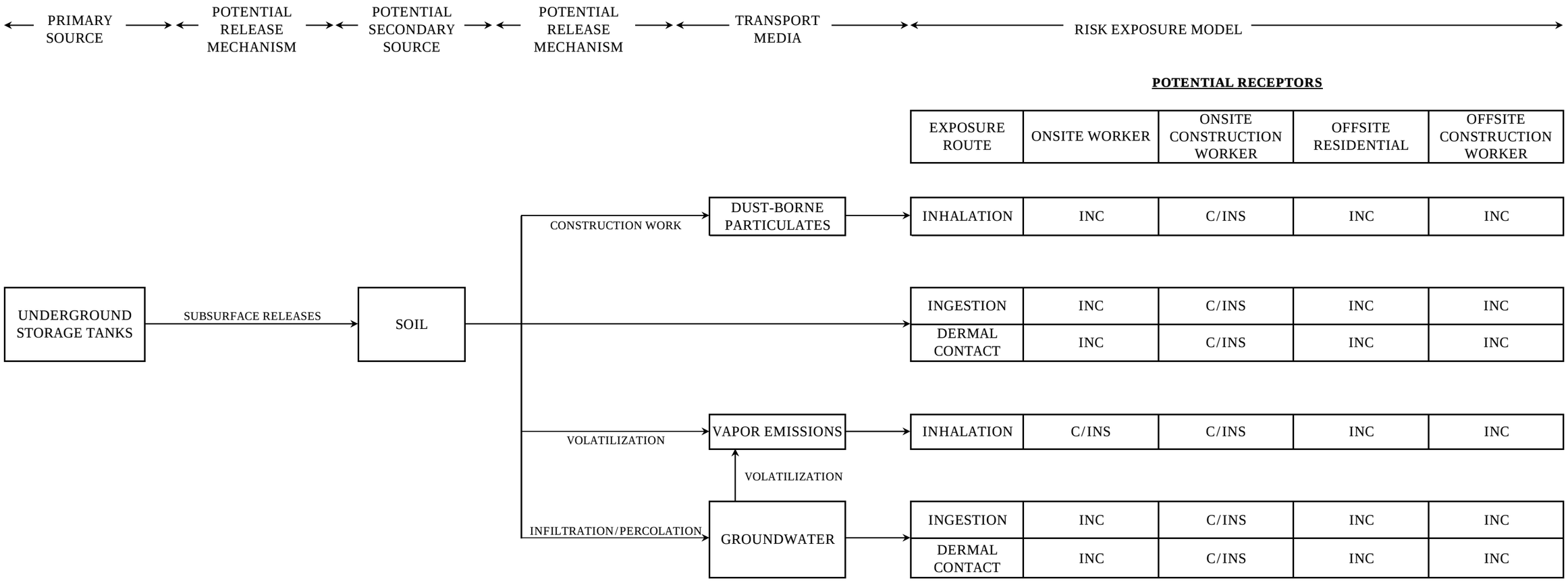
SENSITIVE RECEPTOR SURVEY

United States Postal Service
Vehicle Maintenance Facility
1675 7th Street
Oakland, California

TRC 180497.3 **FIGURE 8**

FILE NAME: Z:\Current\USPS Oakland\Closure Request_Aug13\Fig8_Sensitive Receptor Survey.dwg | Layout Tab: 8x11

Figure 9
Conceptual Site Model - Exposure Pathways
United States Postal Services - Vehicle Maintenance Facility
1675 7th Street, Oakland, CA

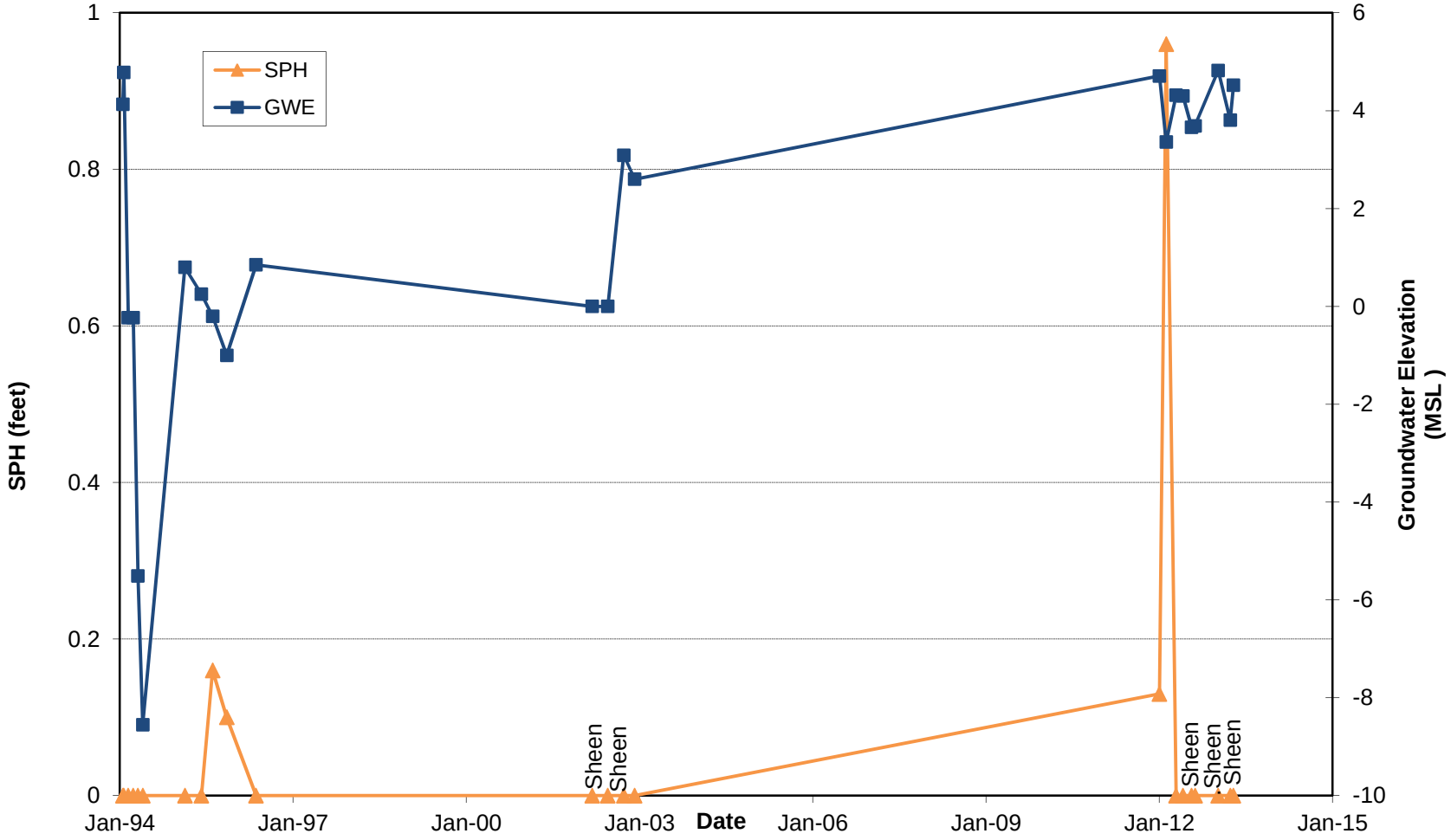


POTENTIAL RECEPTORS

EXPOSURE ROUTE	ONSITE WORKER	ONSITE CONSTRUCTION WORKER	OFFSITE RESIDENTIAL	OFFSITE CONSTRUCTION WORKER
INHALATION	INC	C/INS	INC	INC
INGESTION	INC	C/INS	INC	INC
DERMAL CONTACT	INC	C/INS	INC	INC
INHALATION	C/INS	C/INS	INC	INC
INGESTION	INC	C/INS	INC	INC
DERMAL CONTACT	INC	C/INS	INC	INC

NOTES:
C - COMPLETE PATHWAY
INC - INCOMPLETE PATHWAY
C/INS - COMPLETE PATHWAY, BUT INSIGNIFICANT

Figure 10
Product Thickness and Groundwater Elevation for MW-4
United States Postal Services - Vechicle Maintenance Facility
1675 7th Street, Oakland, CA



GWE - Groundwater elevation
SPH - Separate phase hydrocarbons
MSL -Mean Surface Level

APPENDIX A

HISTORICAL MONITORING AND ANALYTICAL DATA

APPENDIX A: TABLE A-1
Historical Analytical Results of Monitoring Well Groundwater Samples
USPS Oakland VMF
Oakland, CA

(concentrations in micrograms per liter [µg/L])

Monitoring Well	Date	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-1	9/1/1993	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	1/26/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	3/1/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	6/1/1994	<50	73	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	2/22/1995	<50	600	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	6/6/1995	<50	900	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	8/16/1995	<50	810	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	11/14/1995	<50	590	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-1	5/16/1996	NA	900	NA	NA	NA	NA	NA	NA
MW-1	11/15/1996	NA	330	NA	NA	NA	NA	NA	NA
MW-1	3/11/2002	<500	<400	<0.5	<0.5	<0.5	<1.0	<1.0	NA
MW-1	6/19/2002	<50	222	<0.5	<0.5	<0.5	<1.0	1.2	<0.5
MW-1	9/26/2002	<50	519	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5
MW-1	12/5/2002	<50	261	<0.5	<0.5	<0.5	<1.0	1.2	<0.5
MW-1	1/3/2011	<50	161	<1.0	<1.0	<1.0	<2.0	<1.0	<5.0
MW-1	2/15/2012	<50	<50	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0
MW-1	8/15/2012	<50	<52	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0
MW-1	4/15/2013	<50	110	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0
MW-2	9/1/1993	<50	<50	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	1/26/1994	<50	<50	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	3/1/1994	<50	<50	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	6/1/1994	<50	<50	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	2/22/1995	<50	280	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	6/6/1995	<50	570	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	8/16/1995	<50	150	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	11/14/1995	<50	<50	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-2	5/16/1996	NA	320	NA	NA	NA	NA	NA	NA
MW-2	11/15/1996	NA	<50	NA	NA	NA	NA	NA	NA
MW-2	3/11/2002	<50	<400	<0.5	<0.5	<0.5	<1.0	<1.0	<0.5
MW-2	6/19/2002	<50	<50	<0.5	<0.5	<0.5	<1.0	0.9	<0.5
MW-2	9/26/2002	<50	<50	<0.5	<0.5	<0.5	<1.0	4.2	<0.5
MW-2	12/5/2002	<50	80.9	<0.5	<0.5	<0.5	<1.0	1.4	<0.5
MW-2	1/3/2011	<50	<94	<1.0	<1.0	<1.0	<2.0	<1.0	<5.0
MW-2	2/15/2012	<50	<51	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0
MW-2	8/15/2012	<50	<52	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0
MW-2	4/15/2013	<50	170	<0.5	<0.5	<0.5	<1.0	<0.5	<1.0
MW-3	9/1/1993	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-3	1/26/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-3	3/1/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-3	6/1/1994	NS	NS	NS	NS	NS	NS	NS	NS
MW-3	2/22/1995	50	350	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-3	6/6/1995	<50	380	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-3	8/16/1995	<50	440	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-3	11/14/1995	<50	200	0.8	<0.5	<0.5	<0.5	NA	NA
MW-3	5/16/1996	NA	1,100	NA	NA	NA	NA	NA	NA
MW-3	11/15/1996	NA	470	NA	NA	NA	NA	NA	NA
MW-3	3/11/2002	<500	540	<0.5	<0.5	<0.5	<1.0	3.8	<0.5
MW-3	6/19/2002	<50	407	<0.5	<0.5	<0.5	<1.0	4.9	<0.5
MW-3	9/26/2002	<50	741	<0.5	<0.5	<0.5	<1.0	4.4	<0.5
MW-3	12/5/2002	<50	397	<0.5	<0.5	<0.5	<1.0	5.4	<0.5
MW-3	1/3/2011	<50	209	<1.0	<1.0	<1.0	<2.0	2.4	<5.0
MW-3	2/15/2012	<50	<58	<0.5	<0.5	<0.5	<1.0	2.4	<1.0
MW-3	8/15/2012	<50	57	<0.5	<0.5	<0.5	<1.0	2.8	<1.0
MW-3	4/15/2013	<50	240	<0.5	<0.5	<0.5	<1.0	1.9	<1.0
MW-4	9/1/1993	<50	580	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-4	1/26/1994	<50	850	0.8	<0.5	<0.5	<0.5	NA	NA

APPENDIX A: TABLE A-1
Historical Analytical Results of Monitoring Well Groundwater Samples
USPS Oakland VMF
Oakland, CA

Monitoring Well	Date	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	Naphthalene
MW-4	3/1/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-4	6/1/1994	<50	260	1.7	<0.5	<0.5	<0.5	NA	NA
MW-4	2/22/1995	140	1,100	1.4	<0.5	<0.5	<0.5	NA	NA
MW-4	6/6/1995	24,000	23,000	<0.5	<0.5	0.5	<0.5	NA	NA
MW-4	8/16/1995	2,000	3,400	1.2	<0.5	1	0.8	NA	NA
MW-4	11/14/1995	950	7,400	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-4	5/16/1996	<50	2,000	<0.5	<0.5	<0.5	<1.0	NA	NA
MW-4	11/15/1996	600	13,000	0.78	<0.5	0.94	<1.0	NA	NA
MW-4	3/11/2002	NS	NS	<0.5	<0.5	<0.5	<1.0	8.5	26
MW-4	6/19/2002	228	235,000	<2.5	<2.5	<2.5	<5.0	14.1	44.1
MW-4	9/26/2002	<50	16,400	<0.5	<0.5	<0.5	<1.0	6.5	<0.5
MW-4	12/5/2002	<50	513	<0.5	<0.5	<0.5	<1.0	9.3	<0.5
MW-4	1/3/2011	<50	6,620	<1.0	<1.0	<1.0	<2.0	3.3	2.3
MW-4	2/15/2012	290	14,000	<0.5	<0.5	<0.5	<1.0	3	<1.0
MW-4	8/15/2012	180	4,500	<0.5	<0.5	<0.5	<1.0	2	<1.0
MW-4	4/15/2013	83	2,500	<0.5	<0.5	<0.5	<1.0	2.2	<1.0
MW-5	9/1/1993	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-5	1/26/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-5	3/1/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-5	6/1/1994	<50	<50	<0.5	<0.5	<0.5	<0.5	NA	NA
MW-5	Well MW-5 abandoned in January 1995 (PSI 2003)								
MW-6	9/26/2002	<50	<50	<0.5	3.8	<0.5	<1.0	<0.5	<0.5
MW-6	12/5/2002	<50	<50	<0.5	<0.5	<0.5	<1.0	0.6	<0.5
MW-6	1/3/2011	<50	<94	<1.0	<1.0	<1.0	<2.0	0.54	<5.0
MW-6	2/15/2012	<50	<52	<0.5	<0.5	<0.5	<1.0	0.87	<1.0
MW-6	8/15/2012	<50	<52	<0.5	<0.5	<0.5	<1.0	0.6	<1.0
MW-6	4/15/2013	<50	73	<0.5	<0.5	<0.5	<1.0	0.81	<1.0

Notes

< = Indicates that the compound was not detected at or above the stated laboratory reporting limit

NA = Not analyzed
NS = Not sampled

APPENDIX A: TABLE A-2
Historical Groundwater Elevations in Site Monitoring Wells
USPS Oakland VMF
Oakland, CA

Monitoring Well	Date Measured	Historical Top of Casing Elevation	Depth to Product	Depth to Groundwater**	Groundwater Elevation
		(feet msl)	(feet below TOC)	(feet below TOC)	(feet msl)
MW-1	Sep-93	8.3	No product	3.90	4.4
MW-1	1/26/1994		No product	3.64	4.66
MW-1	Feb-94		No product	3.37	4.93
MW-1	Mar-94		No product	7.51	0.79
MW-1	Apr-94		No product	10.74	-2.44
MW-1	May-94		No product	12.98	-4.68
MW-1	Jun-94		No product	15.55	-7.25
MW-1	2/22/1995		No product	6.98	1.32
MW-1	6/6/1995		No product	7.51	0.79
MW-1	8/16/1995		No product	8.11	0.19
MW-1	11/14/1995		No product	9.04	-0.74
MW-1	5/16/1996		No product	7.00	1.3
MW-1	3/11/2002		No product	6.82	1.48
MW-1	6/18/2002		No product	7.16	1.14
MW-1	9/26/2002	11.44**	No product	8.07	3.37
MW-1	12/5/2002		No product	8.32	3.12
MW-1	1/3/2011		Sheen	5.98	5.46
MW-1	2/15/2012		No product	7.67	3.77
MW-1	8/15/2012		No product	7.40	4.04
MW-1	4/15/2013		No product	6.61	4.83
MW-2	Sep-93	8.86	No product	4.55	4.31
MW-2	1/26/1994		No product	4.69	4.17
MW-2	Feb-94		No product	3.98	4.88
MW-2	Mar-94		No product	8.14	0.72
MW-2	Apr-94		No product	10.60	-1.74
MW-2	May-94		No product	13.47	-4.61
MW-2	Jun-94		No product	15.50	-6.64
MW-2	2/22/1995		No product	7.66	1.2
MW-2	6/6/1995		No product	8.06	0.8
MW-2	8/16/1995		No product	8.77	0.09
MW-2	11/14/1995		No product	9.66	-0.8
MW-2	5/16/1996		No product	7.58	1.28
MW-2	3/11/2002		No product	7.45	1.41
MW-2	6/18/2002		No product	7.73	1.13
MW-2	9/26/2002	12.06**	No product	8.64	3.42
MW-2	12/5/2002		No product	9.04	3.02
MW-2	1/3/2011		Sheen	6.75	5.31
MW-2	2/15/2012		Sheen	8.24	3.82

APPENDIX A: TABLE A-2
Historical Groundwater Elevations in Site Monitoring Wells
USPS Oakland VMF
Oakland, CA

Monitoring Well	Date Measured	Historical Top of Casing Elevation	Depth to Product	Depth to Groundwater**	Groundwater Elevation
		(feet msl)	(feet below TOC)	(feet below TOC)	(feet msl)
MW-2	8/15/2012		No product	7.98	4.08
MW-2	4/15/2013	12.06**	No product	7.18	4.88
MW-3	Sep-93	9.28	No product	5.00	4.28
MW-3	1/26/1994		No product	5.04	4.24
MW-3	Feb-94		No product	4.62	4.66
MW-3	Mar-94		No product	9.54	-0.26
MW-3	Apr-94		No product	11.69	-2.41
MW-3	May-94		No product	14.85	-5.57
MW-3	Jun-94	9.28	No product	17.30	-8.02
MW-3	2/22/1995		No product	8.64	0.64
MW-3	6/6/1995		No product	9.07	0.21
MW-3	8/16/1995		No product	9.66	-0.38
MW-3	11/14/1995		No product	10.46	-1.18
MW-3	5/16/1996		No product	8.61	0.67
MW-3	3/11/2002		No product	8.43	0.85
MW-3	6/18/2002		No product	8.64	0.64
MW-3	9/26/2002	12.48**	No product	9.51	2.97
MW-3	12/5/2002		No product	9.91	2.57
MW-3	1/3/2011		Sheen	7.68	4.8
MW-3	2/15/2012		Sheen	9.20	3.28
MW-3	8/15/2012		Sheen	8.89	3.59
MW-3	4/15/2013		Sheen	8.12	4.36
MW-4	Sep-93	8.73	No product	4.55	4.18
MW-4	1/26/1994		No product	4.60	4.13
MW-4	Feb-94		No product	3.95	4.78
MW-4	Mar-94		No product	8.96	-0.23
MW-4	Apr-94		No product	8.96	-0.23
MW-4	May-94		No product	14.24	-5.51
MW-4	Jun-94		No product	17.28	-8.55
MW-4	2/22/1995		No product	7.93	0.8
MW-4	6/6/1995		No product	8.48	0.25
MW-4	8/16/1995		8.92	9.08	-0.20*
MW-4	11/14/1995		9.82	9.92	-1.0*
MW-4	5/16/1996		No product	7.88	0.85
MW-4	3/11/2002		Product	--	--
MW-4	6/18/2002		Product	--	--
MW-4	9/26/2002		No product	9.74	3.09

APPENDIX A: TABLE A-2
Historical Groundwater Elevations in Site Monitoring Wells
USPS Oakland VMF
Oakland, CA

Monitoring Well	Date Measured	Historical Top of Casing Elevation	Depth to Product	Depth to Groundwater**	Groundwater Elevation
		(feet msl)	(feet below TOC)	(feet below TOC)	(feet msl)
MW-4	12/5/2002	12.83**	No product	10.23	2.6
MW-4	1/3/2012		8.25	8.12	4.71
MW-4	2/15/2012	12.83**	10.43	9.47	3.36
MW-4	4/17/2012		Sheen	8.51	4.32
MW-4	5/31/2012		Sheen	8.53	4.3
MW-4	7/24/2012		Sheen	9.17	3.66
MW-4	8/15/2012		Sheen	9.14	3.69
MW-4	1/9/2013		Sheen	8.01	4.82
MW-4	3/26/2013		Sheen	9.02	3.81
MW-4	4/15/2013		Sheen	8.31	4.52
MW-5	Sep-93	8.23	No product	3.63	4.6
MW-5	1/26/1994		No product	3.70	4.53
MW-5	Feb-94		No product	3.23	5
MW-5	Mar-94		No product	7.76	0.47
MW-5	Apr-94		No product	10.19	-1.96
MW-5	May-94		No product	11.46	-3.23
MW-5	Jun-94		No product	14.25	-6.02
Well MW-5 Abandoned January 1995					
MW-6	9/26/2002	11.93**	No product	9.33	2.6
MW-6	12/5/2002		No product	9.73	2.2
MW-6	1/3/2012		No product	7.61	4.32
MW-6	2/15/2012		No product	9.04	2.89
MW-6	8/15/2012		No product	8.79	3.14
MW-6	4/15/2013		No product	7.98	3.95

Notes

* = Groundwater elevation corrected for free product.

** = Top of Casing appears to have been re-surveyed by PSI, 2002

-- = No historical data

TOC =Top of Casing

MSL = Mean Sea Level

APPENDIX B

GROUNDWATER SAMPLING PROTOCOL AND RECORDS

2013 SAMPLING EVENT

Groundwater Sampling: The static water levels in all of the site wells were initially measured to the nearest 0.01 foot using an electronic depth sounder. A Teflon™ bailer or submersible pump was then placed in the middle of the water column and used to purge a minimum of three well-casing volumes of water from each well. After purging each well volume, pH, temperature, and conductivity measurements were recorded. In general, these measurements stabilize (consecutive readings within 10 percent) after three to four well volumes. If, after the third well volume, the pH and conductivity did not stabilize, additional well volumes were removed until these measurements did stabilize. If the yield was low and the well was pumped dry, the well was allowed to recharge to the 80 percent level before sampling. Samples were collected in appropriate sample bottles, labeled, and immediately placed in an ice-chilled chest for delivery to a state-certified analytical laboratory for analysis.

All well development and sampling equipment was cleaned in a solution of laboratory grade detergent and distilled water, or steam cleaned, before use at each sampling point. Well sampling records are attached as part of this Appendix.

GROUNDWATER SAMPLING RECORD

Project No.: 180497.3
Project Name: USPS Oakland VMF
Weather: clear, cool

Date: 4-15-13
Measured By: JPZ
Page 1 of 1

Well Name: MW-1
Sample Number: 9.45
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	6.61
(b) Measured Total Depth (ft)	20.11
(c) Height of Water Column (ft) = b – a	13.50
(d) Casing Diameter (in)	4
(e) Casing Volume (gal) = 0.041 × c × d²	8.8 =

WELLHEAD CONDITIONS	
Casing:	OK - but no bolts on lid.
Lock:	OK
Standing Water:	No
Comments/Required Maintenance:	bolts for lid.

INSTRUMENTS		CALIBRATION NOTES
Water Level:	YSI 556 MPS	
Temperature:	↓	
pH:		
Specific Conductance:		
Dissolved Oxygen:		
Redox Potential:		
Turbidity:		
Salinity:		

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µS/cm or µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity	Salinity	Comments
9.05	8.0	6.61	1.0	16.93	6.16	2273	4.18	235.4	clear	–	–	no odor
		"	3.0	16.79	6.37	2180	2.30	243.1	clear	–	–	
		"	5.0	16.82	6.42	2198	1.84	245.6	clear	–	–	
		"	7.0	16.25	6.53	2291	1.82	279.6	clear	–	–	
		"	9.0	16.46	6.55	2327	1.94	287.4	clear	–	–	
		"	12.0	16.98	6.55	2314	1.54	283.4	clear			
		"	15.0	16.20	6.53	2267	1.49	283.0	clear			
		"	18.0	16.01	6.57	2139	1.98	307.2	clear			
		"	22.0	15.98	6.57	2079	1.34	275.5	clear			

GROUNDWATER SAMPLING RECORD

Project No.: 180497.3
Project Name: USPS Oakland VMF
Weather: clear, cool

Date: 4-15-13
Measured By: JPZ
Page 1 of 1

Well Name: MW-2
Sample Number: 10:40
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	7.18
(b) Measured Total Depth (ft)	18.69
(c) Height of Water Column (ft) = b – a	11.51
(d) Casing Diameter (in)	4
(e) Casing Volume (gal) = 0.041 × c × d²	7.55

WELLHEAD CONDITIONS	
Casing:	Ok
Lock:	Ok
Standing Water:	Yes
Comments/Required Maintenance:	none

INSTRUMENTS		CALIBRATION NOTES
Water Level:	YSI 556 MPS	
Temperature:		
pH:		
Specific Conductance:		
Dissolved Oxygen:		
Redox Potential:		
Turbidity:		
Salinity:		

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity	Salinity	Comments
10:05	9.0	7.18	2.0	15.52	6.39	1837	1.48	249.3	Clear	–	–	
		"	5.0	15.97	6.39	1859	1.29	250.5	Clear	–	–	
		"	10.0	15.22	6.38	1860	1.38	244.8	Clear	Grey –	–	
		"	16.0	15.53	6.41	1879	1.82	242.5	Clear	Grey –	–	
		"	19.0	14.93	6.40	1818	1.85	238.7	Clear	Grey –	–	
		"	22.0	15.27	6.37	1781	1.69	246.4	Clear	Grey –	–	
		"										

TRC

GROUNDWATER SAMPLING RECORD

Project No.: 180497.3
Project Name: USPS Oakland VMF
Weather: clear, cool

Date: 4-15-13
Measured By: JPZ
Page 1 of 1

Well Name: MW-3
Sample Number: 1130
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	8.12
(b) Measured Total Depth (ft)	20.00
(c) Height of Water Column (ft) = b – a	11.88
(d) Casing Diameter (in)	4
(e) Casing Volume (gal) = 0.041 × c × d²	7.8

WELLHEAD CONDITIONS	
Casing:	OK
Lock:	OK
Standing Water:	Yes
Comments/Required Maintenance:	none

INSTRUMENTS		CALIBRATION NOTES
Water Level:	YSI 556 MPS	
Temperature:	↓	
pH:		
Specific Conductance:		
Dissolved Oxygen:		
Redox Potential:		
Turbidity:		
Salinity:		

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity	Salinity	Comments
11:00	9.5	8.12	3.0	16.03	6.81	2044	2.77	241.1	Clear	–	–	
		"	6.0	16.48	6.81	2042	2.47	252.2	Clear	–	–	
		"	9.0	16.42	6.83	2042	2.37	243.3	Clear	–	–	
		"	12.0	16.70	6.81	2028	2.13	242.5	Clear	–	–	
		"	15.0	16.91	6.80	2021	1.85	246.5	Clear	–	–	
		"	18.0	16.51	6.81	2035	1.82	257.1	Clear			
		"	23.0	15.88	6.81	2028	1.78	248.4	Clear			

TRC

GROUNDWATER SAMPLING RECORD

Project No.: 180497.3
Project Name: USPS Oakland VMF
Weather: clear, cool

Date: 4-15-13
Measured By: JPZ
Page 1 of 1

Well Name: MW-4
Sample Number: 125
Chain-of-Custody No.:
Measuring Point: TOC
Screened Interval (ft):

(a) Initial Water Level (ft)	8.31
(b) Measured Total Depth (ft)	19.50
(c) Height of Water Column (ft) = b – a	11.19
(d) Casing Diameter (in)	4
(e) Casing Volume (gal) = 0.041 × c × d²	7.3

WELLHEAD CONDITIONS
Casing: OK
Lock: OK
Standing Water: yes
Comments/Required Maintenance: no locks on well lid

INSTRUMENTS		CALIBRATION NOTES
Water Level:	YSI 556 MPS	
Temperature:		
pH:		
Specific Conductance:		
Dissolved Oxygen:		
Redox Potential:		
Turbidity:		
Salinity:		

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity	Salinity	Comments
12:30	10.0	8.31	1.0	17.32	6.40	1456	1.53	-35.5	Grey Brn	–	–	odor, sheen
		"	4.0	17.02	6.44	1495	2.45	-76.3	Grey Brn	–	–	
		"	7.0	16.59	6.45	1636	1.80	-64.3	Grey Brn	–	–	
		"	10.0	16.66	6.46	1716	1.68	-66.7	Clearing	–	–	
		"	15.0	17.04	6.47	1720	1.48	-61.5	Clear	–	–	
		"	18.0	16.60	6.53	1751	1.32	-11.8	Clear			
		"	21.0	16.85	6.47	1735	1.04	-15.0	Clear			

TRC

GROUNDWATER SAMPLING RECORD

Project No.: 180497.3
Project Name: USPS Oakland VMF
Weather: clear, cool, sunny

Date: 4-15-13
Measured By: JBZ
Page 1 of 1

Well Name: MW-6
Sample Number: 12:20
Chain-of-Custody No.:
Measuring Point:
Screened Interval (ft):

(a) Initial Water Level (ft)	7.98
(b) Measured Total Depth (ft)	20.70
(c) Height of Water Column (ft) = b – a	12.72
(d) Casing Diameter (in)	2
(e) Casing Volume (gal) = 0.041 × c × d²	2.0

WELLHEAD CONDITIONS	
Casing:	OK
Lock:	none
Standing Water:	NO
Comments/Required Maintenance:	LOCK

INSTRUMENTS		CALIBRATION NOTES
Water Level:	YSI 556 MPS	
Temperature:		
pH:		
Specific Conductance:		
Dissolved Oxygen:		
Redox Potential:		
Turbidity:		
Salinity:		

Time	Intake Depth (ft bmp)	Depth to Water (ft bmp)	Cum. Vol. Purged (gal)	Temp. (°C)	pH	Specific Cond. (µmhos/cm)	DO (mg/L)	Redox (mV)	Color	Turbidity	Salinity	Comments
12:00	9.0	7.98	1.5	19.47	6.58	874	2.39	210.1	lt brn	–	–	
		"	3.0	19.10	6.61	977	1.54	211.8	lt brn	–	–	
		"	6.0	19.05	6.38	1074	1.40	242.8	lt brn	–	–	

EILCO

Environmental Instruments Leasing Company 1-800-648-9355

Calibration &Components Checklist
YSI Model 556

Instrument ID # 586 pH, conductivity, D.O., ORP, Temperature

Components

Date Out: 4/12/13 Date In: _____

Meter: ✓	✓	Meter
Probe: ✓	✓	Probe
Batteries: ✓	✓	Batteries
Carrying strap: ✓	✓	Carrying strap
Manual: ✓	✓	Manual
Case: ✓	✓	Case
Calibration beaker: ✓	✓	Calibration beaker
Flow thru cell: ✓	✓	Flow thru cell
Terms & Conditions: ✓	✓	Terms & Conditions

Calibration Solution Used

4.01 Buffer pH: _____	4.01 Meter Response
7.01 Buffer pH: _____	7.01 Meter Response
10.01 Buffer pH: _____	9.96 Meter Response
1413 mS/cm cond. _____	1413 Meter Response
Temp. _____	22.97 Meter Response
D.O. _____	8.56 Meter Response
ORP _____	240 Meter Response
Barometer pressure _____	758.4 Meter Response

Inspected & Tested By: _____ Date: 4/12/13

Note: This unit has been tested and is in proper working condition. This unit has been cleaned and should be returned in the same condition. Any components missing upon return of this instrument shall be billed at the current price. If the unit is returned overly dirty or damaged a service order will be issued and your account will be billed. Should the unit malfunction you must notify EILCO within 24 hours or you will be billed for the time the unit was in your possession.

5650 Imhoff Drive, Suite A, Concord, CA. 94520 Phone 800/648-9355
Fax 925/686-4608

APPENDIX C

ANALYTICAL RESULTS – APRIL 2013

The chilled samples were delivered to a state-certified analytical laboratory. Chain of custody documentation was maintained for all samples. Attached are copies of the analytical results and the chain of custody forms.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-49133-1
Client Project/Site: USPS Oakland VMF
Revision: 1

For:
TRC Solutions, Inc.
167 Filbert St.
Oakland, California 94607

Attn: Mr. Jacob Zepeda

Authorized for release by:
4/18/2013 4:52:44 PM

Dimple Sharma
Project Manager I
dimple.sharma@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 720-49133-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative
720-49133-1

Comments
No additional comments.

Receipt
The samples were received on 4/15/2013 2:26 PM; the samples arrived in good condition, properly preserved and, where required, on ice.
The temperature of the cooler at receipt was 3.8º C.

GC/MS VOA
No analytical or quality issues were noted.

GC Semi VOA
No analytical or quality issues were noted.

Organic Prep
No analytical or quality issues were noted.

Detection Summary

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Client Sample ID: MW-1 — Lab Sample ID: 720-49133-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	110		50		ug/L	1		8015B	Total/NA

Client Sample ID: MW-2 — Lab Sample ID: 720-49133-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	170		51		ug/L	1		8015B	Total/NA
Motor Oil Range Organics [C24-C36]	390		100		ug/L	1		8015B	Total/NA

Client Sample ID: MW-3 — Lab Sample ID: 720-49133-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	1.9		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	240		50		ug/L	1		8015B	Total/NA

Client Sample ID: MW-6 — Lab Sample ID: 720-49133-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	0.81		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	73		51		ug/L	1		8015B	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 720-49133-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	2.2		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C5-C12	83		50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	2500		50		ug/L	1		8015B	Total/NA
Motor Oil Range Organics [C24-C36]	210		99		ug/L	1		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Client Sample ID: MW-1
Date Collected: 04/15/13 09:45
Date Received: 04/15/13 14:26

Lab Sample ID: 720-49133-1
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			04/15/13 22:20	1
Benzene	ND		0.50		ug/L			04/15/13 22:20	1
Ethylbenzene	ND		0.50		ug/L			04/15/13 22:20	1
Toluene	ND		0.50		ug/L			04/15/13 22:20	1
Xylenes, Total	ND		1.0		ug/L			04/15/13 22:20	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			04/15/13 22:20	1
TBA	ND		4.0		ug/L			04/15/13 22:20	1
Naphthalene	ND		1.0		ug/L			04/15/13 22:20	1
Ethyl t-butyl ether	ND		0.50		ug/L			04/15/13 22:20	1
DIPE	ND		0.50		ug/L			04/15/13 22:20	1
TAME	ND		0.50		ug/L			04/15/13 22:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*90*		*67 - 130*		*04/15/13 22:20*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*75 - 138*		*04/15/13 22:20*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*04/15/13 22:20*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**110**		50		ug/L		04/15/13 19:03	04/16/13 10:02	1
Motor Oil Range Organics [C24-C36]	ND		100		ug/L		04/15/13 19:03	04/16/13 10:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*78*		*23 - 156*	*04/15/13 19:03*	*04/16/13 10:02*	*1*

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Client Sample ID: MW-2
Date Collected: 04/15/13 10:40
Date Received: 04/15/13 14:26

Lab Sample ID: 720-49133-2
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			04/15/13 23:43	1
Benzene	ND		0.50		ug/L			04/15/13 23:43	1
Ethylbenzene	ND		0.50		ug/L			04/15/13 23:43	1
Toluene	ND		0.50		ug/L			04/15/13 23:43	1
Xylenes, Total	ND		1.0		ug/L			04/15/13 23:43	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			04/15/13 23:43	1
TBA	ND		4.0		ug/L			04/15/13 23:43	1
Naphthalene	ND		1.0		ug/L			04/15/13 23:43	1
Ethyl t-butyl ether	ND		0.50		ug/L			04/15/13 23:43	1
DIPE	ND		0.50		ug/L			04/15/13 23:43	1
TAME	ND		0.50		ug/L			04/15/13 23:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*91*		*67 - 130*		*04/15/13 23:43*	*1*
1,2-Dichloroethane-d4 (Surr)	*111*		*75 - 138*		*04/15/13 23:43*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*04/15/13 23:43*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**170**		51		ug/L		04/15/13 19:03	04/16/13 10:26	1
Motor Oil Range Organics [C24-C36]	**390**		100		ug/L		04/15/13 19:03	04/16/13 10:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*67*		*23 - 156*	*04/15/13 19:03*	*04/16/13 10:26*	*1*

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Client Sample ID: MW-3
Date Collected: 04/15/13 11:30
Date Received: 04/15/13 14:26

Lab Sample ID: 720-49133-3
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**1.9**		0.50		ug/L			04/16/13 00:11	1
Benzene	ND		0.50		ug/L			04/16/13 00:11	1
Ethylbenzene	ND		0.50		ug/L			04/16/13 00:11	1
Toluene	ND		0.50		ug/L			04/16/13 00:11	1
Xylenes, Total	ND		1.0		ug/L			04/16/13 00:11	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			04/16/13 00:11	1
TBA	ND		4.0		ug/L			04/16/13 00:11	1
Naphthalene	ND		1.0		ug/L			04/16/13 00:11	1
Ethyl t-butyl ether	ND		0.50		ug/L			04/16/13 00:11	1
DIPE	ND		0.50		ug/L			04/16/13 00:11	1
TAME	ND		0.50		ug/L			04/16/13 00:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*67 - 130*		*04/16/13 00:11*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*75 - 138*		*04/16/13 00:11*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*04/16/13 00:11*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**240**		50		ug/L		04/15/13 19:03	04/16/13 11:06	1
Motor Oil Range Organics [C24-C36]	ND		100		ug/L		04/15/13 19:03	04/16/13 11:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*67*		*23 - 156*	*04/15/13 19:03*	*04/16/13 11:06*	*1*

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Client Sample ID: MW-6
Date Collected: 04/15/13 12:20
Date Received: 04/15/13 14:26

Lab Sample ID: 720-49133-4
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	**0.81**		0.50		ug/L			04/16/13 00:38	1
Benzene	ND		0.50		ug/L			04/16/13 00:38	1
Ethylbenzene	ND		0.50		ug/L			04/16/13 00:38	1
Toluene	ND		0.50		ug/L			04/16/13 00:38	1
Xylenes, Total	ND		1.0		ug/L			04/16/13 00:38	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			04/16/13 00:38	1
TBA	ND		4.0		ug/L			04/16/13 00:38	1
Naphthalene	ND		1.0		ug/L			04/16/13 00:38	1
Ethyl t-butyl ether	ND		0.50		ug/L			04/16/13 00:38	1
DIPE	ND		0.50		ug/L			04/16/13 00:38	1
TAME	ND		0.50		ug/L			04/16/13 00:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*67 - 130*		*04/16/13 00:38*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*75 - 138*		*04/16/13 00:38*	*1*
Toluene-d8 (Surr)	*98*		*70 - 130*		*04/16/13 00:38*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	**73**		51		ug/L		04/15/13 19:03	04/16/13 11:30	1
Motor Oil Range Organics [C24-C36]	ND		100		ug/L		04/15/13 19:03	04/16/13 11:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*64*		*23 - 156*	*04/15/13 19:03*	*04/16/13 11:30*	*1*

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Client Sample ID: MW-4
Date Collected: 04/15/13 13:25
Date Received: 04/15/13 14:26

Lab Sample ID: 720-49133-5
Matrix: Water

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	2.2		0.50		ug/L			04/16/13 01:06	1
Benzene	ND		0.50		ug/L			04/16/13 01:06	1
Ethylbenzene	ND		0.50		ug/L			04/16/13 01:06	1
Toluene	ND		0.50		ug/L			04/16/13 01:06	1
Xylenes, Total	ND		1.0		ug/L			04/16/13 01:06	1
Gasoline Range Organics (GRO) -C5-C12	83		50		ug/L			04/16/13 01:06	1
TBA	ND		4.0		ug/L			04/16/13 01:06	1
Naphthalene	ND		1.0		ug/L			04/16/13 01:06	1
Ethyl t-butyl ether	ND		0.50		ug/L			04/16/13 01:06	1
DIPE	ND		0.50		ug/L			04/16/13 01:06	1
TAME	ND		0.50		ug/L			04/16/13 01:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*67 - 130*		*04/16/13 01:06*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*75 - 138*		*04/16/13 01:06*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*04/16/13 01:06*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	2500		50		ug/L		04/15/13 20:00	04/16/13 11:30	1
Motor Oil Range Organics [C24-C36]	210		99		ug/L		04/15/13 20:00	04/16/13 11:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*74*		*23 - 156*	*04/15/13 20:00*	*04/16/13 11:30*	*1*

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-134402/5
Matrix: Water
Analysis Batch: 134402

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		0.50		ug/L			04/15/13 19:30	1
Benzene	ND		0.50		ug/L			04/15/13 19:30	1
Ethylbenzene	ND		0.50		ug/L			04/15/13 19:30	1
Toluene	ND		0.50		ug/L			04/15/13 19:30	1
Xylenes, Total	ND		1.0		ug/L			04/15/13 19:30	1
Gasoline Range Organics (GRO) -C5-C12	ND		50		ug/L			04/15/13 19:30	1
TBA	ND		4.0		ug/L			04/15/13 19:30	1
Naphthalene	ND		1.0		ug/L			04/15/13 19:30	1
Ethyl t-butyl ether	ND		0.50		ug/L			04/15/13 19:30	1
DIPE	ND		0.50		ug/L			04/15/13 19:30	1
TAME	ND		0.50		ug/L			04/15/13 19:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*87*		*67 - 130*		*04/15/13 19:30*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*75 - 138*		*04/15/13 19:30*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*04/15/13 19:30*	*1*

Lab Sample ID: LCS 720-134402/6
Matrix: Water
Analysis Batch: 134402

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	25.0	26.4		ug/L		106	62 - 130
Benzene	25.0	24.3		ug/L		97	79 - 130
Ethylbenzene	25.0	24.8		ug/L		99	80 - 120
Toluene	25.0	24.6		ug/L		98	78 - 120
m-Xylene & p-Xylene	50.0	49.4		ug/L		99	70 - 142
o-Xylene	25.0	23.9		ug/L		96	70 - 130
TBA	500	471		ug/L		94	70 - 130
Naphthalene	25.0	24.5		ug/L		98	70 - 130
Ethyl t-butyl ether	25.0	21.7		ug/L		87	70 - 130
DIPE	25.0	25.1		ug/L		100	69 - 134
TAME	25.0	21.8		ug/L		87	79 - 130

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*108*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*98*		*75 - 138*
Toluene-d8 (Surr)	*103*		*70 - 130*

Lab Sample ID: LCS 720-134402/8
Matrix: Water
Analysis Batch: 134402

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C5-C12	500	436		ug/L		87	62 - 120

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-134402/8
Matrix: Water
Analysis Batch: 134402

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	105		67 - 130
1,2-Dichloroethane-d4 (Surr)	101		75 - 138
Toluene-d8 (Surr)	108		70 - 130

Lab Sample ID: LCSD 720-134402/7
Matrix: Water
Analysis Batch: 134402

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether			25.0	26.9		ug/L		108	62 - 130	2	20
Benzene			25.0	24.0		ug/L		96	79 - 130	1	20
Ethylbenzene			25.0	24.9		ug/L		99	80 - 120	0	20
Toluene			25.0	24.9		ug/L		100	78 - 120	1	20
m-Xylene & p-Xylene			50.0	49.6		ug/L		99	70 - 142	0	20
o-Xylene			25.0	24.0		ug/L		96	70 - 130	0	20
TBA			500	480		ug/L		96	70 - 130	2	20
Naphthalene			25.0	24.4		ug/L		97	70 - 130	1	20
Ethyl t-butyl ether			25.0	22.4		ug/L		89	70 - 130	3	20
DIPE			25.0	25.8		ug/L		103	69 - 134	3	20
TAME			25.0	22.1		ug/L		89	79 - 130	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	108		67 - 130
1,2-Dichloroethane-d4 (Surr)	97		75 - 138
Toluene-d8 (Surr)	104		70 - 130

Lab Sample ID: LCSD 720-134402/9
Matrix: Water
Analysis Batch: 134402

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C5-C12			500	427		ug/L		85	62 - 120	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	105		67 - 130
1,2-Dichloroethane-d4 (Surr)	101		75 - 138
Toluene-d8 (Surr)	109		70 - 130

Lab Sample ID: 720-49133-1 MS
Matrix: Water
Analysis Batch: 134402

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl tert-butyl ether	ND		25.0	30.5		ug/L		122	60 - 138
Benzene	ND		25.0	24.2		ug/L		97	60 - 140
Ethylbenzene	ND		25.0	23.4		ug/L		94	60 - 140
Toluene	ND		25.0	23.3		ug/L		93	60 - 140

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: 720-49133-1 MS
Matrix: Water
Analysis Batch: 134402

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
m-Xylene & p-Xylene	ND		50.0	47.0		ug/L		94	60 - 140
o-Xylene	ND		25.0	22.9		ug/L		92	60 - 140
TBA	ND		500	453		ug/L		91	60 - 140
Naphthalene	ND		25.0	24.4		ug/L		97	56 - 140
Ethyl t-butyl ether	ND		25.0	24.9		ug/L		100	60 - 140
DIPE	ND		25.0	28.1		ug/L		113	60 - 140
TAME	ND		25.0	25.2		ug/L		101	60 - 140

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*108*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*106*		*75 - 138*
Toluene-d8 (Surr)	*106*		*70 - 130*

Lab Sample ID: 720-49133-1 MSD
Matrix: Water
Analysis Batch: 134402

Client Sample ID: MW-1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methyl tert-butyl ether	ND		25.0	28.8		ug/L		115	60 - 138	6	20
Benzene	ND		25.0	24.7		ug/L		99	60 - 140	2	20
Ethylbenzene	ND		25.0	23.9		ug/L		96	60 - 140	2	20
Toluene	ND		25.0	23.7		ug/L		95	60 - 140	2	20
m-Xylene & p-Xylene	ND		50.0	47.6		ug/L		95	60 - 140	1	20
o-Xylene	ND		25.0	23.3		ug/L		93	60 - 140	2	20
TBA	ND		500	462		ug/L		92	60 - 140	2	20
Naphthalene	ND		25.0	23.1		ug/L		93	56 - 140	5	20
Ethyl t-butyl ether	ND		25.0	24.8		ug/L		99	60 - 140	1	20
DIPE	ND		25.0	28.2		ug/L		113	60 - 140	0	20
TAME	ND		25.0	24.6		ug/L		98	60 - 140	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*110*		*67 - 130*
1,2-Dichloroethane-d4 (Surr)	*102*		*75 - 138*
Toluene-d8 (Surr)	*106*		*70 - 130*

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 720-134366/1-A
Matrix: Water
Analysis Batch: 134352

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 134366

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		50		ug/L		04/15/13 11:50	04/16/13 00:29	1
Motor Oil Range Organics [C24-C36]	ND		99		ug/L		04/15/13 11:50	04/16/13 00:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
p-Terphenyl	*104*		*23 - 156*	*04/15/13 11:50*	*04/16/13 00:29*	*1*

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 720-134366/2-A
Matrix: Water
Analysis Batch: 134352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 134366

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Diesel Range Organics [C10-C28]			2500	1800		ug/L		72	40 - 150		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
p-Terphenyl	*109*		*23 - 156*

Lab Sample ID: LCSD 720-134366/3-A
Matrix: Water
Analysis Batch: 134352

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 134366

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]			2500	1840		ug/L		74	40 - 150	2	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
p-Terphenyl	*109*		*23 - 156*

GC/MS VOA

Analysis Batch: 134402

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49133-1	MW-1	Total/NA	Water	8260B/CA_LUFT MS	
720-49133-1 MS	MW-1	Total/NA	Water	8260B/CA_LUFT MS	
720-49133-1 MSD	MW-1	Total/NA	Water	8260B/CA_LUFT MS	
720-49133-2	MW-2	Total/NA	Water	8260B/CA_LUFT MS	
720-49133-3	MW-3	Total/NA	Water	8260B/CA_LUFT MS	
720-49133-4	MW-6	Total/NA	Water	8260B/CA_LUFT MS	
720-49133-5	MW-4	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-134402/6	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-134402/8	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-134402/7	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-134402/9	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-134402/5	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

GC Semi VOA

Analysis Batch: 134352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-134366/2-A	Lab Control Sample	Total/NA	Water	8015B	134366
LCSD 720-134366/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	134366
MB 720-134366/1-A	Method Blank	Total/NA	Water	8015B	134366

Prep Batch: 134366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49133-1	MW-1	Total/NA	Water	3510C	
720-49133-2	MW-2	Total/NA	Water	3510C	
720-49133-3	MW-3	Total/NA	Water	3510C	
720-49133-4	MW-6	Total/NA	Water	3510C	
720-49133-5	MW-4	Total/NA	Water	3510C	
LCS 720-134366/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 720-134366/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 720-134366/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 134435

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49133-1	MW-1	Total/NA	Water	8015B	134366
720-49133-3	MW-3	Total/NA	Water	8015B	134366
720-49133-4	MW-6	Total/NA	Water	8015B	134366

Analysis Batch: 134436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49133-2	MW-2	Total/NA	Water	8015B	134366

GC Semi VOA (Continued)

Analysis Batch: 134436 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-49133-5	MW-4	Total/NA	Water	8015B	134366

Lab Chronicle

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Client Sample ID: MW-1

Lab Sample ID: 720-49133-1

Date Collected: 04/15/13 09:45

Matrix: Water

Date Received: 04/15/13 14:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	134402	04/15/13 22:20	PD	TAL PLS
Total/NA	Prep	3510C			134366	04/15/13 19:03	AM	TAL PLS
Total/NA	Analysis	8015B		1	134435	04/16/13 10:02	DH	TAL PLS

Client Sample ID: MW-2

Lab Sample ID: 720-49133-2

Date Collected: 04/15/13 10:40

Matrix: Water

Date Received: 04/15/13 14:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	134402	04/15/13 23:43	PD	TAL PLS
Total/NA	Prep	3510C			134366	04/15/13 19:03	AM	TAL PLS
Total/NA	Analysis	8015B		1	134436	04/16/13 10:26	DH	TAL PLS

Client Sample ID: MW-3

Lab Sample ID: 720-49133-3

Date Collected: 04/15/13 11:30

Matrix: Water

Date Received: 04/15/13 14:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	134402	04/16/13 00:11	PD	TAL PLS
Total/NA	Prep	3510C			134366	04/15/13 19:03	AM	TAL PLS
Total/NA	Analysis	8015B		1	134435	04/16/13 11:06	DH	TAL PLS

Client Sample ID: MW-6

Lab Sample ID: 720-49133-4

Date Collected: 04/15/13 12:20

Matrix: Water

Date Received: 04/15/13 14:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	134402	04/16/13 00:38	PD	TAL PLS
Total/NA	Prep	3510C			134366	04/15/13 19:03	AM	TAL PLS
Total/NA	Analysis	8015B		1	134435	04/16/13 11:30	DH	TAL PLS

Client Sample ID: MW-4

Lab Sample ID: 720-49133-5

Date Collected: 04/15/13 13:25

Matrix: Water

Date Received: 04/15/13 14:26

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	134402	04/16/13 01:06	PD	TAL PLS
Total/NA	Prep	3510C			134366	04/15/13 20:00	AM	TAL PLS
Total/NA	Analysis	8015B		1	134436	04/16/13 11:30	DH	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Laboratory: TestAmerica Pleasanton

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-14

Method Summary

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Method	Method Description	Protocol	Laboratory
8260B/CA_LUFTMS	8260B / CA LUFT MS	SW846	TAL PLS
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL PLS

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Sample Summary

Client: TRC Solutions, Inc.
Project/Site: USPS Oakland VMF

TestAmerica Job ID: 720-49133-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-49133-1	MW-1	Water	04/15/13 09:45	04/15/13 14:26
720-49133-2	MW-2	Water	04/15/13 10:40	04/15/13 14:26
720-49133-3	MW-3	Water	04/15/13 11:30	04/15/13 14:26
720-49133-4	MW-6	Water	04/15/13 12:20	04/15/13 14:26
720-49133-5	MW-4	Water	04/15/13 13:25	04/15/13 14:26

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TESTAMERICA San Francisco Chain of Custody

1220 Quarry Lane • Pleasanton CA 94566-4756
Phone: (925) 484-1919 • Fax: (925) 600-3002

720-49133

Reference #: 145406

Date 4-15-13 Page 1 of 1

4/18/2013

Report To

Attn: Jacob Zapeda
Company: TRC - San Francisco
Address: 101 2nd St Suite 300
Phone: 925-260-0427 Email: jzapeda@trcsolutions.com
Bill To: TRC
Sampled By: Jacob Zapeda
Attn:
Phone: 925-260-0427

Analysis Request

Sample ID	Date	Time	Matrix	Preserv.	TPH EPA - ☐ 8015/8021 ☐ 8260B ☐ Gas w/ BTEX & MTBE X	Purgeable Aromatics BTEX EPA - ☐ 8021 ☐ 8260B	TEPH EPA 8015M* ☐ Silica Gel ☐ Diesel X ☐ Motor Oil ☐ Other	Fuel Tests EPA 8260B: ☐ Gas ☐ BTEX ☐ Five Oxyenates ☐ DCA, EDB ☐ Ethanol	Purgeable Halocarbons (HVOCs) EPA 8021 by 8260B	Volatile Organics GC/MS (VOCs) ☐ EPA 8260B ☐ 624	Semivolatiles GC/MS ☐ EPA 8270 ☐ 625	Oil and Grease ☐ Petroleum (EPA 1664) ☐ Total	Pesticides ☐ EPA 8081 ☐ 608 PCBs ☐ EPA 8082 ☐ 608	PNAs by ☐ 8270 ☐ 8310	CAM17 Metals (EPA 6010/7470/7471)	Metals: ☐ Lead ☐ LUFT ☐ RCRA ☐ Other:	Low Level Metals by EPA 200.8/6020 (ICP-MS)	☐ W.E.T (STLC) ☐ TCLP	☐ Hexavalent Chromium ☐ pH (24h hold time for H_2O)	☐ Spec Cond. ☐ Alkalinity ☐ TSS ☐ TDS ☐	Anions: ☐ Cl ☐ SO_4 ☐ NO_3 ☐ F ☐ Br ☐ NO_2 ☐ PO_4				Number of Containers
MW-1	4/15/13	9:45	W	HCl vials	X		X																			5
MW-2		10:40																								5
MW-3		11:30																								5
MW-6		12:20																								5
MW-4		1:25																								5

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Project Info.

Project Name: USPS Oakland VMF
Project#: 180497.3000
PO#:
Credit Card#:

Sample Receipt

of Containers:
Head Space:
Temp: 3.8°C
Conforms to record:

TAT: 5 Day | 72h | 48h | 24h | Other: Thursday 5pm

Report: ☐ Routine ☐ Level 3 ☐ Level 4 X EDD X State Tank Fund EDF
Special Instructions / Comments: X Global ID will email Global ID to you

See Terms and Conditions on reverse
*TestAmenca SF reports 8015M from C_8-C_{24} (industry norm). Default for 8015B is C_{10}-C_{28}

1) Relinquished by:
Signature: Jacob Zapeda Time: 9:26
Printed Name: Jacob Zapeda Date: 4-15-13
Company: TRC

2) Relinquished by:
Signature: Time:
Printed Name: Date:
Company:

3) Relinquished by:
Signature: Time:
Printed Name: Date:
Company:

720-49133 Chain of Custody

1) Received by:
Signature: T. Bullock Time: 14:26
Printed Name: T. Bullock Date: 4-15-13
Company: TEST AMERICA

2) Received by:
Signature: Time:
Printed Name: Date:
Company:

3) Received by:
Signature: Time:
Printed Name: Date:
Company:

RUSH

Rev02/09

Login Sample Receipt Checklist

Client: TRC Solutions, Inc.

Job Number: 720-49133-1

Login Number: 49133

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Gonzales, Justinn

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	