

YRC Worldwide Inc
10990 Roe Avenue
Overland Park, KS 66211



May 23, 2013

RECEIVED

By Alameda County Environmental Health at 4:19 pm, Aug 05, 2013

To Whom It May Concern:

Attached is the "Former Roadway Express – 1708 Wood St., Oakland – Metals Review" for the former YRC Inc. (formerly known as Roadway Express) d.b.a. YRC Freight, property located at 1708 Wood Street in Oakland, CA 94607, Fuel Leak Case No. RO 0000039. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached report are true and correct to the best of my knowledge.

YRC Freight is a subsidiary of YRC Worldwide Inc., and as Manager – Environmental Services and Properties of YRC Freight, I have been charged by YRC Worldwide Inc., to represent YRC Freight.

Sincerely,

Ruben D. Byerley
Manager – Environmental Services and Properties
YRC Freight

May 23, 2013

Keith Nowell
Hazardous Materials Specialist
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: Former Roadway Express- 1708 Wood St, Oakland- Metals Review

Dear Mr. Nowell:

On behalf of YRC Inc. (YRC), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) has prepared this memorandum to evaluate metals concentrations in soil and groundwater at the subject site located at 1708 Wood Street, Oakland, CA (Site) (see Figure 1 and Figure 2). The facility is currently occupied by Three Rivers Trucking as a trucking facility. This letter has been prepared in response to conversations between yourself and Mr. Ruben Byerley (YRC Freight: Manager-Environmental Services & Properties) regarding the potential sources of the metals concentrations in soil and groundwater observed at the Site; including nearby sites with environment impacts, historical uses of the Site, and naturally occurring (background) concentrations.

YRC operated the facility as a trucking terminal comprised of a dock, office, and a storage building. Preventative maintenance on tractors was performed in the central-eastern portion of the Site. Major mechanical repairs were not performed on Site (i.e. grinding, welding, machining).

Introduction

The Site is located in an area that has been utilized for heavy industrial purposes for more than fifty years. The potential for environmental impacts associated with nearby sites affecting the media at the Site, particularly groundwater, is likely. Nearby sites potentially contributing to metals contamination in soil and groundwater are presented in Table 1, and select sites are shown on Figure 1.

Historical uses of the Site include industrial (roofing, furniture warehousing, sheet metal, and iron works) and automotive (McKinley Perkins Petroleum, historical underground storage tanks [USTs], and California Motor Express) (ACC Environmental Consultants [ACC], 2011).

Background concentrations of metals in soil from nine Bay Area sites were summarized in the *Feasibility Study, Hookston Station, Pleasant Hill, California* (Environment Resources Management [EMR], 2006) and are included in Appendix A as EMR Table A-2, *Comparison of Background Concentrations of Metals in Bay Area Soils*. A summary of additional background

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soil and groundwater data used in the evaluation presented in this letter is presented in Appendix A as Table A-1, *Background Concentrations of Metals in Soil and Groundwater*, and is based on the following publications:

- *Ambient Soil Concentrations Technical Memorandum, United States Army Reserve Center, Rio Vista, California* (ARCADIS Geraghty & Miller, Inc., 2000);
- *Inorganic Chemicals in Ground Water and Soil: Background Concentrations at California Air Force Bases* (Hunter, Davis, and Roach, 2005); and
- *Analysis of Background Distributions in Metals in Soil at the Lawrence Berkeley National Laboratory (LBNL)* (LBNL, 2009) (this publication is an update of the LBNL data referenced in EMR Table A-2).

Site soil and groundwater data evaluated are included in Table 2 through Table 5 (soil) and Table 6 through Table 8 (groundwater). Data included in Table 2 through Table 8 were presented in the following documents:

- *Site Investigation, Roadway Express, Inc., 1708 Wood Street, Oakland California* (Site Investigation) (Burns & McDonnell, 2008a);
- *Draft Phase II ESA – Limited Soil and Groundwater Investigation, Roadway/YRC Worldwide – 1708 Wood Street, Oakland, California* (Phase II ESA) (ACC, 2011); and
- *Underground Storage Tank & Oil Water Separator Removal Report, YRC Enterprise Services, Inc., Former Roadway Express Facility, 1708 Wood Street, Oakland, CA* (Removal Report) (Burns & McDonnell, 2012).

Site soil and groundwater data were compared to San Francisco Regional Water Quality Control Board Environmental Screening Levels (ESLs) for Commercial/Industrial Land Use where groundwater is not a current or potential source of Drinking Water.

Soil

Soil data evaluated were collected as grab samples using direct-push sampling techniques during investigation activities (Site Investigation and Phase II ESA) and using excavation sampling techniques during removal activities (Removal Report).

Results presented in the Site Investigation (Burns & McDonnell, 2008a) for four borings (BM-1, BM-7, BM-8, and BM-9; see Figure 3 and Figure 4) sampled for metals analysis indicated ESL exceedances in soil for arsenic, ranging from 2.8 micrograms per kilogram (mg/kg) to 5.4 mg/kg (see Table 2). These concentrations are within the background range for arsenic of 1.2 mg/kg to 42 mg/kg (see Appendix A Table A-1).

Results presented in the Phase II ESA (ACC, 2011) for borings sampled for metals analysis indicated ESL exceedances in soil for arsenic (ten borings), copper (one boring), lead (two

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borings), and zinc (one boring), as indicated in Table 3. Phase II ESA boring locations are presented in Appendix B, ACC Figure 1. The arsenic concentrations ranged from 4.2 mg/kg to 11 mg/kg, within the background range for arsenic of 1.2 mg/kg to 42 mg/kg. Boring SB-1 exceeded the ESL for copper, lead, and zinc (copper [270 mg/kg] and lead [780 mg/kg] were detected near the ESLs of 230 mg/kg and 750 mg/kg, respectively). Boring SB-1 was located at the western perimeter of the Site, west of the northwest corner USTs and associated excavation (Appendix B, Figure 1). Soil samples from Boring SB-1 were collected from 2.5-3.0 feet below ground surface (bgs). Nearby Borings SB-2 and SB-3 did not show similar ESL exceedances. During the UST excavation, it was noted that multiple debris items (including rusted metal ties, plate sheet metal, corrugated tin sheets, bricks, and beverage bottles) were observed at a depth of one to one and a half feet bgs (Burns & McDonnell, 2012). Based on the historical uses of the Site, nearby sites, and location of the Boring SB-1 (outside of the northwest corner UST area), it is probable that metal impacts at Boring SB-1 are not related to YRC activities at the Site. Boring SB-12 exceeded the ESL for lead. Boring SB-12 was located east of Monitoring Well MW-5, outside of the oil water separator (OWS) excavation extent and the central-eastern UST excavation extent. Soil samples from Boring SB-12 were collected from 2.0-2.5 feet bgs (refusal unexpectedly encountered at 3 feet bgs). Nearby Boring SB-11 (north of Boring SB-12) exhibited elevated lead concentrations (but below the ESL) compared to other soil samples at the Site, suggesting that the areas of lead impact are limited. During the OWS excavation, it was noted that multiple debris items (including rusted metal ties, plate sheet metal, corrugated tin sheets, bricks, and beverage bottles) were observed at a depth of one to one and a half feet bgs (Burns & McDonnell, 2012). Based on the historical uses of the Site, nearby sites, and location of the Boring SB-12 (outside of the OWS and central-eastern UST area), it is probable that lead impact at Boring SB-12 is not related to YRC activities at the Site.

Results presented in the Removal Report (Burns & McDonnell, 2012) for one sample location from the OWS excavation (OWS-2NE3 [and resample of that location, OWS-NEA3], see Figure 4) sampled for metals analysis indicated ESL exceedances in soil for zinc in both samples and cadmium in OWS-NEA3 (see Table 4). Samples at these locations were collected from three feet bgs. Nearby sample location OWS-3E3 and Phase II ESA Borings SB-11 and SB-12 exhibited elevated zinc and cadmium concentrations (but below the respective ESLs) compared to other Site samples, suggesting that the area of zinc and cadmium impact is limited. During the OWS excavation, it was noted that multiple debris items (including rusted metal ties, plate sheet metal, corrugated tin sheets, bricks, and beverage bottles) were observed at a depth of one to one and a half feet bgs (Burns & McDonnell, 2012). Based on the historical uses of the Site, nearby sites, and the apparent limited extent of the zinc and cadmium impact, the source of the zinc and cadmium impact is uncertain. Zinc impacts are commonly associated with electroplating, galvanizing, and refining and smelting activities. Cadmium impacts are commonly associated with metal plating and smelting activities.

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Results presented in the Removal Report (Burns & McDonnell, 2012) for four deep soil samples (15.6-16 feet bgs, collected from the floor of the northwest corner UST area excavation) exhibited metals concentrations that were below ESLs, indicating the vertical extent of metals impact is limited (see Table 5). This is consistent with data from the *Additional Site Assessment Report, Roadway Express, Inc., 1708 Wood Street, Oakland, California* (Additional Site Assessment Report) (Burns & McDonnell, 2008b), which indicated that the clayey Bay Mud layer encountered at a depth of approximately 15 feet bgs limits the vertical migration of contaminants.

Groundwater

Groundwater data evaluated were collected as grab samples using temporary well (installed with direct-push equipment) sampling techniques during investigation activities (Site Investigation and Phase II ESA) and using open pit sampling techniques during removal activities (Removal Report). Groundwater samples collected for the Site Investigation and Removal Report were not filtered at the time of collection and represent total metals concentrations. Groundwater samples collected for the Phase II ESA were filtered at the time of collection and represent dissolved metals concentrations.

Results presented in the Site Investigation for four borings (BM-1, BM-7, BM-8, and BM-9; see Figure 3 and Figure 4) sampled for metals analysis indicated ESL exceedances in groundwater for multiple constituents (see Table 6). The boring locations of BM-7, BM-8, and BM-9 were within the northwest corner USTs excavation area (USTs removed in 2011) and BM-1 was near the central-eastern UST excavation area (UST removed in 1987) (Burns & McDonnell, 2012). The Leaking Underground Fuel Tanks (LUFT) 5 metals (cadmium, chromium, lead, nickel, and zinc) exceeded ESLs at the four borings, with the exception of cadmium at BM-7 and BM-8 and chromium at BM-8. Several additional metals also exceeded their respective ESLs (cobalt, copper, and vanadium in the four borings; antimony in BM-1; and arsenic and barium in BM-1 and BM-9). The groundwater sample results presented in the Site Investigation are representative of total (unfiltered) metals concentrations collected as grab samples from temporary wells. The presence of additional metals constituents beyond the LUFT 5 metals suggests the metals impact may be from sources other than the USTs. The elevated concentrations may be largely related to suspended particulates and colloids, rather than dissolved metals species, because most metals tend to be far more concentrated in clays and colloids than in dissolved form.

Results presented in the Phase II ESA for borings sampled for metals analysis (see Table 7) indicated ESL exceedances in groundwater at four borings (SB-1, SB-10, SB-11, and SB-17, see Appendix B, ACC Figure 1). Boring SB-1 exceeded the ESL for arsenic. Boring SB-1 was

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located at the western perimeter of the Site, west of the northwest corner USTs and associated excavation. Nearby Borings SB-2, SB-4, and SB-6 did not show similar ESL exceedances for groundwater. During the UST excavation, it was noted that multiple debris items (including rusted metal ties, plate sheet metal, corrugated tin sheets, bricks, and beverage bottles) were observed at a depth of one to one and a half feet bgs (Burns & McDonnell, 2012). Based on the historical uses of the Site, nearby sites, and location of Boring SB-1 (outside of the northwest corner UST area), it is probable that metal impacts in groundwater at Boring SB-1 are not related to YRC activities at the Site. Boring SB-17 was located at the northeastern corner of the Site to evaluate the potential of impacted groundwater migrating onto the Site. Cobalt, copper, lead, mercury, nickel, vanadium, and zinc exceeded ESLs at Boring SB-17. Based on the historical uses of the Site, nearby sites, and location of Boring SB-17 (upgradient perimeter of Site), it is probable that metals impacts at SB-17 are not related to YRC activities at the Site. Boring SB-10 exceeded the ESL for beryllium, cobalt, and nickel, and Boring SB-11 exceeded the ESL for nickel. Borings SB-10 and SB-11 were in the vicinity of Boring SB-12 and Removal Report soil sample locations OWS-2NE3 and OWS-NEA-3 which may be in an area impacted by historical uses or nearby sites. Cobalt and nickel concentrations in Boring SB-10 and the nickel concentration in SB-11 were below the background concentrations of 25 micrograms per liter ($\mu\text{g/L}$) (cobalt) and 455 $\mu\text{g/L}$ (nickel), as indicated in Appendix A Table A-1. There was no background concentration established for beryllium in groundwater in the samples evaluated for the background study. Boring SB-10 was the only sample location at the Site where beryllium was detected in groundwater. The groundwater sample results presented in the Phase II ESA are representative of dissolved (filtered) metals concentrations collected as grab samples from temporary wells.

Results presented in the Removal Report for five samples from the northwest corner UST excavation and OWS excavation sampled for metals analysis (see Table 8) indicated ESL exceedances in groundwater for lead, nickel, and zinc in five samples and cadmium and chromium in one sample (WTank Grab). The samples (WTank Grab and ETank Grab) collected from the UST excavation were noted to have been in contact with the USTs and shoring prior to UST removal (Burns & McDonnell, 2012), and may not be representative of the groundwater conditions. The groundwater sample results presented in the Removal Report are representative of total (unfiltered) metals concentrations collected as grab samples from open excavations. Additionally, a second round of groundwater samples were not collected from the excavation as the temporary wells installed showed no recharge of groundwater after a 24 hour period. The potential sources (USTs, and OWS and associated piping) of the metals impact were removed and soil samples collected from below the USTs, the OWS, and OWS cleanout line did not exceed ESLs.

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Conclusions

Evaluation of metals concentrations in soil and groundwater at the Site suggests that metals impacts may be attributed to nearby sites, historical use, or background concentrations, specifically:

- During the UST and OWS excavations in 2011, it was noted that multiple debris items (including rusted metal ties, plate sheet metal, corrugated tin sheets, bricks, and beverage bottles), *likely associated with non-YRC historical activities at the site(?)*, were observed at a depth of one to one and a half feet bgs (Burns & McDonnell, 2012); YRC performed preventative maintenance on Site, major mechanical repairs were not performed on Site.
- Arsenic concentrations in soil are within the range of background concentrations observed at other sites in the Bay Area and in California;
- Metal impacted soil and groundwater at the west perimeter of the Site are likely attributed to non-YRC (?) historical uses of the Site or nearby sites;
- Lead impact in soil in the central-eastern portion of the Site is limited in extent and likely attributed to non-YRC? historical uses of the Site or nearby sites;
- Groundwater data from the Site Investigation and Removal Report are representative of total (unfiltered) metals concentrations collected as grab samples collected from temporary wells and open excavations, respectively. Observed metals concentrations in these samples may be largely related to suspended clay particulates and colloids, not only dissolved metals species. Groundwater data from the Phase II ESA are representative of dissolved (filtered) metals concentrations collected as grab samples from temporary wells.
- Cadmium and zinc impacts in soil near the northeast corner of the OWS pit are limited in extent and the source of these impacts is uncertain;
- Metals impacts in groundwater at borings within the northwest corner USTs excavation area and near the central-eastern UST excavation area may be attributed to non-YRC? historical uses of the Site or nearby sites due to the presence of additional metals beyond the LUFT 5 metals (typically not related to LUFT releases);
- Cobalt and nickel impacts in groundwater near the OWS pit are comparable to background concentrations; beryllium impact may be related to non-YRC? historical use or nearby sites;
- Metals impacted groundwater at the east perimeter of the Site is likely attributed to impacted groundwater migrating onto the Site from nearby upgradient(?) sites with environmental impacts;
- Groundwater samples collected from the northwest corner UST excavation were noted to have been in contact with the USTs and shoring prior to UST removal and may not be representative of the groundwater conditions. Additionally, a second round of groundwater samples were not collected from this location as the temporary wells installed showed no recharge of groundwater after a 24 hour period.

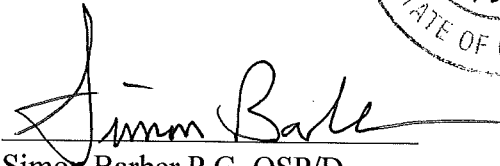
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If you have any questions or comments regarding this evaluation of metals in soil and groundwater at the Site, please contact either of the undersigned,

Sincerely,



David Barker
Project Geologist- Environmental Group



Simon Barber P.G. QSP/D
Geologist- Environmental Group



Attachments:

Figures

Figure 1 – Site Location Map

Figure 2 – Site Map

Figure 3 – Northwest Corner UST Area Sample Locations

Figure 4 – Central Eastern (OWS) Area Sample Locations

Tables

Table 1 – RWQCB and DTSC Metals Sites within ½-Mile Radius of 1708 Wood Street

Table 2 – Summary of CAM 17 Metals in Shallow Soil (≤ 3 m bgs) (December 2007)

Table 3 – Summary of CAM 17 Metals in Shallow Soil (≤ 3 m bgs) (February 2011)

Table 4 – Summary of LUFT 5 Metals in Shallow Soil (≤ 3 m bgs) (October-November 2011)

Table 5 – Summary of LUFT 5 Metals in Deep Soil (≥ 3 m bgs) (October 2011)

Table 6 – Summary of CAM 17 Metals in Groundwater (December 2007)

Table 7 – Summary of Metals in Groundwater (February 2011)

Table 8 – Summary of LUFT 5 Metals in Groundwater (October-November 2011)

Appendices

Appendix A – Summary of Background Concentrations

Appendix B – ACC Figure 1

cc: Ruben Byerley- YRC Freight
Steve Shinnars- YRC Freight



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Cherrie McCaulou- SF Bay-RWQCB

TABLES

TABLE 1
RWQCB and DTSC Metals Sites within ½-Mile Radius of 1708 Wood Street
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

SITE NAME	GLOBAL ID	FACILITY ID	CLEANUP STATUS	ADDRESS	CITY	METALS OF CONCERN	HISTORICAL USE/ACTIVITY
14TH STREET APARTMENTS (AKA IRON HORSE)	SL0600197637		COMPLETED - CASE CLOSED			ARSENIC, LEAD	
A. BERCOVICH 18TH STREET	1420131	1420131	CERTIFIED O&M - LAND USE RESTRICTIONS ONLY	1639 18TH STREET	OAKLAND	LEAD	MANUFACTURING - SMELTING AND REFINING OPERATIONS; MANUFACTURING - PAINT; RECYCLING - SCRAP METAL/METAL SALVAGE
ACME GALVANIZING	T10000001503		OPEN - ASSESSMENT & INTERIM REMEDIAL ACTION	1655 17TH	OAKLAND	LEAD	
ALTA PLATING & CHEMICAL CORP.	70000088	70000088	INACTIVE - NEEDS EVALUATION	1433 18TH STREET	OAKLAND	NICKEL, ZINC	METAL PLATING
BNSF WOOD STREET YARD	1400017	1400017	CERTIFIED O&M - LAND USE RESTRICTIONS ONLY	WOOD STREET & WEST GRAND AVENUE	OAKLAND	ARSENIC	RAILROAD RIGHT-OF-WAY
CENTRAL STATION VILLAGE	SL0600180308		COMPLETED - CASE CLOSED	1401-1599 WOOD STREET	OAKLAND	LEAD	
GAINES PROPERTY	1750030	1750030	CERTIFIED	1795 11TH STREET	OAKLAND	LEAD	JUNKYARD; RECYCLING - SCRAP METAL
GLOBE METALS	T0600191528		OPEN - INACTIVE	1820 10TH ST	OAKLAND	LEAD	
LDS TRUCKING	1420127	1420127	CERTIFIED	2233 WOOD STREET	OAKLAND	LEAD	TRUCK REPAIR SHOP; RETAIL SERVICE STATION
MANDELA PARKWAY CORRIDOR	1410118	1410118	CERTIFIED	MANDELA PARKWAY BETWEEN 34TH AND 8TH STS	OAKLAND	LEAD	HIGHWAY RIGHT-OF-WAY
MANDELA GRAND	60000433	60000433	INACTIVE - NEEDS EVALUATION	MANDELA PARKWAY AND WEST GRAND	OAKLAND	LEAD, CADMIUM AND COMPOUNDS	
OAKLAND ARMY BASE	1970006	1970006	ACTIVE	2475-D WEST 12TH STREET	OAKLAND	ARSENIC, LEAD, MANGANESE AND COMPOUNDS, MERCURY, SILVER, TOTAL CHROMIUM	MULTIPLE: LANDFILLS; BATTERY STORAGE; EQUIPMENT / INSTRUMENT REPAIR; JUNKYARD; MANUFACTURING; METAL FINISHING; PAINT/DEPAINT FACILITY; RAIL ROAD MAINTENANCE SHOP; RECYCLING; SERVICE STATION; SHIPYARD; WAREHOUSING; MAINTENANCE/CLEANING; OTHER
NEW OAKLAND FIRE STATION #3	1920063	1920063	CERTIFIED	CENTER AND 14TH STREET	OAKLAND	LEAD	
RELIANCE UPHOLSTERY SUPPLY	70000082	70000082	CERTIFIED	1614 CAMPBELL STREET	OAKLAND		WAREHOUSING; LIGHT BULB MANUFACTURING; COTTON MILL
SOUTHERN PACIFIC OAKLAND / SOUTHERN PACIFIC TRANSPORTATION COMPANY	1400001 / SLT20193296	1400001	REFER: RWQCB / OPEN - INACTIVE	1707 WOOD STREET	OAKLAND	ARSENIC, LEAD	FOUNDRY; MANUFACTURING - LUMBER/WOOD PRODUCTS; RAIL ROAD MAINTENANCE SHOP; VEHICLE MAINTENANCE
TKG CALIFORNIA STORAGE	60000712	60000712	CERTIFIED O&M - LAND USE RESTRICTIONS ONLY	2450 MANDELA PARKWAY	OAKLAND	CHROMIUM III, LEAD	FUEL - VEHICLE STORAGE/ REFUELING; MACHINE SHOP; METAL FINISHING/METAL COATING; WAREHOUSING
WEST RECYCLER BIN STORAGE	1890018	1890018	REFER: RWQCB	1405 WOOD STREET	OAKLAND	ARSENIC, LEAD, CADMIUM AND COMPOUNDS, MOLYBDENUM	EQUIPMENT/INSTRUMENT REPAIR; VEHICLE MAINTENANCE
WILLOW PARK	1990028	1990028	NO FURTHER ACTION	1368 WILLOW STREET	OAKLAND	ARSENIC, LEAD	AUTOMOBILE GARAGES; MULTI-TENANT RESIDUAL STRUCTURE; MISCELLANEOUS STORED OBJECTS AND VEHICLES

Source: California State Water Resources Control Board GeoTracker, retrieved from <http://geotracker.waterboards.ca.gov/#>

Notes:

DTSC - Department of Toxic Substances Control

RWQCB - Regional Water Quality Control Board

TABLE 2
Summary of CAM 17 Metals in Shallow Soil (≤3 m bgs) (December 2007)
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

Boring ID		BM-1	BM-7	BM-8	BM-9
Sample Depth (feet bgs)		8	6	7	5
Date Collected		12/10/2007	12/10/2007	12/10/2007	12/10/2007
Metal	California Tier 1 ESL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg
Antimony	40	1.0 U	1.0 U	1.0 U	1.0 U
Arsenic	1.6	5.1	3.2	5.4	2.8
Barium	1,500	21	34	54	94
Beryllium	8	1.0 U	1.0 U	1.0 U	1.0 U
Cadmium	7.4	1.4	1.0 U	1.0 U	1.0 U
Chromium	750	44	50	42	31
Cobalt	80	14	8.0	5.3	7.7
Copper	230	19	23	36	28
Lead	750	6.0	9.6	49	22
Mercury	10	0.050 U	0.050 U	0.25	0.050 U
Molybdenum	40	1.0 U	1.4	1.0 U	1.0 U
Nickel	150	65	37	26	25
Selenium	10	2.0 U	2.0 U	2.0 U	2.0 U
Silver	40	1.0 U	1.0 U	1.0 U	1.0 U
Thallium	16	2.0 U	2.0 U	2.0 U	2.0 U
Vanadium	200	36	41	35	33
Zinc	600	51	61	100	70

Notes:

Detections presented in bold

Concentrations exceeding California Tier 1 ESL are highlighted

bgs - below ground surface

California Tier 1 ESL - Commercial/Industrial Land Use Only, Groundwater is not a
Current or Potential Source of Drinking Water

CAM - California Administrative Manual

ESL - Environmental Screening Level

m - meters

mg/kg - milligrams per kilogram

U - not detected above laboratory reporting limit

Source: *Underground Storage Tank & Oil Water Separator Removal Report*
(Burns & McDonnell, 2012)

TABLE 3
Summary of CAM 17 Metals in Shallow Soil (≤3 m bgs) (February 2011)
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

Boring ID	SB-1	SB-2	SB-3	SB-4	SB-5	SB-6	SB-7	SB-8	SB-11	SB-12	SB-13	SB-14	SB-15	SB-16	
Sample Depth (feet bgs)	2.5 - 3.0	2.5 - 3.0	2.0 - 2.5	2.0 - 2.5	2.0 - 2.5	2.0 - 2.5	2.5 - 3.0	1.5 - 2.0	2.0 - 2.5	2.0 - 2.5	1.5 - 2.0	14.5 - 16	2.0 - 2.5	2.0 - 2.5	
Date Collected	2/15/2011	2/15/2011	2/15/2011	2/15/2011	2/15/2011	2/15/2011	2/16/2011	2/17/2011	2/16/2011	2/16/2011	2/16/2011	2/16/2011	2/16/2011	2/17/2011	
Metal	California Tier 1 ESL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
Arsenic	1.6	11	4.8	4.4	8.6	5	3.8 U	4.5	3.9 U	7.8	5.9	4.3	4.2 U	2.0 U	4.2
Barium	1,500	1,000	77	21	13	34	85	120	160	76	270	110	87	110	130
Beryllium	8	0.38 U	0.38 U	0.42 U	0.42 U	0.41 U	0.38 U	0.4 U	0.39 U	0.42 U	0.38 U	0.42 U	0.42 U	0.39 U	0.4 U
Cadmium	7.4	3.3	0.48 U	0.53 U	0.52 U	0.52 U	0.48 U	0.5 U	0.49 U	1.1	1.1	0.53 U	0.53 U	0.49 U	0.5 U
Chromium	750	49	39	40	42	48	49	81	59	39	43	45	26	46	35
Cobalt	80	10	5.5	5	3.7	5.1	4.4	10	7.7	7.7	9	5.8	4	7.5	6
Copper	230	270	23	16	21	26	18	23	14	36	27	22	6.3 U	28	41
Lead	750	780	44	18	3.2	8.5	19	15	9.9	420	1,300	110	4.4	250	340
Molybdenum	40	1.9 U	1.9 U	2.1 U	3.4	2.1 U	1.9 U	2.0 U	2.0 U	2.1 U	1.9 U	2.1 U	2.1 U	2.0 U	2.0 U
Nickel	150	60	31	31	24	33	34	100	59	44	37	32	18	34	29
Silver	40	1	0.95 U	1.1 U	1.0 U	1.0 U	0.95 U	1.0 U	0.98 U	1.0 U	0.95 U	1.1 U	1.1 U	0.98 U	0.99 U
Vanadium	200	25	32	29	33	35	34	31	20	17	28	34	16	28	26
Zinc	600	1,200	120	48	100	130	47	60	36	210	290	100	12	100	250
Mercury	10	0.67	0.097	0.037	0.12	0.15	0.043	0.062	1.1	0.27	0.1	0.043	0.033	0.38	0.18

Notes:
Detections presented in bold
Concentrations exceeding California Tier 1 ESL are highlighted
bgs - below ground surface
California Tier 1 ESL - Commercial/Industrial Land Use Only, Groundwater is not a Current or Potential Source of Drinking Water
CAM - California Administrative Manual
ESL - Environmental Screening Level
m - meters
mg/kg - milligrams per kilogram
U - not detected above laboratory reporting limit

Source: Draft Phase II EDA - Limited Soil and Groundwater Investigation (ACC, 2011)

TABLE 4
Summary of LUFT 5 Metals in Shallow Soil (≤3 m bgs) (October-November 2011)
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

Boring ID		OWS-1N3	Dup-1 (OWS-1N3)	OWS-2NE3	OWS-3E3	OWS-4S3.6	OWS-5W3
Sample Depth (feet bgs)		3	3	3	3	3.6	3
Date Collected		10/27/2011	10/27/2011	10/27/2011	10/27/2011	10/27/2011	10/27/2011
Comments		North Sidewall	North Sidewall	Northeast Sidewall	East Sidewall	South Sidewall	West Sidewall
Metal	California Tier 1 ESL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cadmium	7.4	0.92 U	0.93 U	5.0	2.0	0.89 U	0.91 U
Chromium	750	30.0	32.3	29.6	30.5	29.8	32.6
Lead	750	57.0	260	171	412	184	58.8
Nickel	150	35.0	67.1	42.5	76.6	36.7	25.9
Zinc	600	102	184	1,710	539	155	51.3

Boring ID		OWS-6F4	OWS-11-3A	OWS NEA-3	OWSL-1-4	OWSL-2-3	OWSL-3-4
Sample Depth (feet bgs)		4	4.6	3	4	3	4
Date Collected		10/27/2011	11/3/2011	11/9/2011	11/9/2011	11/9/2011	11/9/2011
Comments		OWS Floor	OWS-6F4 Resample	OWS-2NE3 Resample	Oil Water Line	Oil Water Line	Oil Water Line
Metal	California Tier 1 ESL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cadmium	7.4	0.97 U	0.97 U	12.1	1.0 U	0.91 U	0.95 U
Chromium	750	45.3	43.8	37.1	53.2	51.2	47.0
Lead	750	70.4	4.7	59.0	6.6	28.2	21.4
Nickel	150	27.2	22.0	39.3	31.9	41.6	33.6
Zinc	600	98.9	31.5	1,990	56.8	100	81.6

Boring ID		OWSL-4-2	SW1-E3	SW2-N5	SW3-W4B	SW4-W3.6
Sample Depth (feet bgs)		2	3	5	4	3.6
Date Collected		11/9/2011	11/18/2011	11/18/2011	11/18/2011	11/18/2011
Comments		Oil Water Line	Sidewalk- East sidewall	Sidewalk-North Sidewall	Sidewalk-NW Sidewall	Sidewalk-NW Sidewall
Metal	California Tier 1 ESL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Cadmium	7.4	0.99 U	0.93 U	0.93 U	0.89 U	0.90 U
Chromium	750	40.0	28.5	52.4	50.6	41.8
Lead	750	53.9	3.2	7.4	5.8	197.0
Nickel	150	43.4	16.6	61.2	54.1	43.8
Zinc	600	85.0	28.0	56.1	50.8	180

Notes:

Detections presented in bold

Concentrations exceeding California Tier 1 ESL are highlighted

bgs - below ground surface

California Tier 1 ESL - Commercial/Industrial Land Use Only, Groundwater is not a Current or Potential Source of Drinking Water

ESL - Environmental Screening Level

LUFT - Leaking Underground Fuel Tanks

m - meters

mg/kg - milligrams per kilogram

U - not detected above laboratory reporting limit

Source: *Underground Storage Tank & Oil Water Separator Removal Report* (Burns & McDonnell, 2012)

TABLE 5
Summary of LUFT 5 Metals in Deep Soil (≥3 m bgs) (October 2011)
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

Boring ID		West-W16	West-E16	East-W15.6	East-E16
Sample Depth (feet bgs)		16	16	15.6	16
Date Collected		10/31/2011	10/31/2011	10/31/2011	10/31/2011
Comments		West UST-West End	West UST-East End	East UST-West End	East UST-East End
Metal	California Tier 1 ESL (mg/kg)	mg/kg	mg/kg	mg/kg	mg/kg
Cadmium	39	0.88 U	0.89 U	0.93 U	0.90 U
Chromium	5,000	51.8	47.9	49.6	46.3
Lead	750	5.6	5	5.3	3.9
Nickel	260	49.2	45.3	47.9	37
Zinc	5,000	44.5	41	43.8	35.7

Notes:

Detections presented in bold

Concentrations exceeding California Tier 1 ESL are highlighted

bgs - below ground surface

California Tier 1 ESL - Commercial/Industrial Land Use Only, Groundwater is not a
Current or Potential Source of Drinking Water

ESL - Environmental Screening Level

LUFT - Leaking Underground Fuel Tanks

m - meters

mg/kg - milligrams per kilogram

U - not detected above laboratory reporting limit

Source: *Underground Storage Tank & Oil Water Separator Removal Report* (Burns & McDonnell, 2012)

TABLE 6
Summary of CAM 17 Metals in Groundwater (December 2007)
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

Boring ID		BM-1	BM-7	BM-8	BM-9
Sample Depth (feet bgs)		8	6	7	5
Date Collected		12/10/2007	12/10/2007	12/10/2007	12/10/2007
Metal	California Tier 1 ESL (µg/L)	µg/L	µg/L	µg/L	µg/L
Antimony	30	63	10 U	10 U	11
Arsenic	36	430	31	11	72
Barium	1,000	5,600	270	94	2,400
Beryllium	0.53	5.0 U	5.0 U	5.0 U	5.0 U
Cadmium	0.25	16	2.0 U	2.0 U	7
Chromium	180	5,500	270	110	610
Cobalt	3	610	42	15	170
Copper	3.1	2,900	110	45	640
Lead	2.5	9,200	83	30	860
Mercury	0.025	0.2 U	0.2 U	0.2 U	0.2 U
Molybdenum	240	5.0 U	5.0	5.0 U	22
Nickel	8.2	3,500	220	75	500
Selenium	5	20 U	20 U	20 U	20 U
Silver	0.19	5.0 U	5.0 U	5.0 U	5.0 U
Thallium	4	20 U	20 U	20 U	20 U
Vanadium	19	4,000	230	90	580
Zinc	81	7,200	260	87	1,500

Notes:

Detections presented in bold

Concentrations exceeding California Tier 1 ESL are highlighted

Concentrations presented represent total metals (unfiltered) data

bgs - below ground surface

California Tier 1 ESL - Commercial/Industrial Land Use Only, Groundwater is not a
Current or Potential Source of Drinking Water

CAM - California Administrative Manual

ESL - Environmental Screening Level

m - meters

µg/L - micrograms per liter

U - not detected above laboratory reporting limit

Source: *Underground Storage Tank & Oil Water Separator Removal Report* (Burns & McDonnell, 2012)

TABLE 7
Summary of Metals in Groundwater (February 2011)
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

Boring ID	SB-1	SB-2	SB-3	SB-4	SB-6	SB-7	SB-10	SB-11	SB-16	SB-17	SB-18	
Sample Depth (feet bgs)	7 - 12	7 - 12	7 - 12	7 - 12	7 - 12	7 - 12	7 - 12	7 - 12	7 - 12	7 - 12	7 - 12	
Date Collected	2/15/2011	2/15/2011	2/15/2011	2/15/2011	2/16/2011	2/17/2011	2/16/2011	2/16/2011	2/17/2011	2/17/2011	2/17/2011	
Metal	California Tier 1 ESL (µg/L)	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
Arsenic	36	130	10 U	NA	10 U	10 U	10 U	10 U	10 U	11	10 U	10 U
Barium	1,000	130	65	NA	77	110	53	460	240	110	240	36
Beryllium	0.53	2.0 U	2.0 U	NA	2.0 U	2.0 U	2.0 U	2.9	2.0 U	2.0 U	2.0 U	2.0 U
Cadmium	0.25	2.5 U	2.5 U	NA	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U
Chromium	180	10 U	10 U	NA	10 U	10 U	10 U	10 U	10 U	10 U	88	10 U
Cobalt	3	2.0 U	2.4	NA	2.0 U	2.0 U	2.0 U	4	2.0 U	2.0 U	18	2.0 U
Copper	3.1	20 U	20 U	NA	20 U	20 U	20 U	20 U	20 U	20 U	70	20 U
Lead	2.5	5.0 U	5.0 U	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	100	5.0 U
Mercury	0.025	0.2 U	0.2 U	NA	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.29	0.2 U
Molybdenum	240	10 U	11	NA	10 U	11	10 U	14	10 U	10 U	10 U	10 U
Nickel	8.2	10 U	10 U	NA	10 U	10 U	10 U	11	68	10 U	59	10 U
Vanadium	19	10 U	10 U	NA	10 U	10 U	10	10 U	10 U	10 U	76	10 U
Zinc	81	56	25	NA	20 U	31	20 U	22	26	27	240	20 U

Notes:

- Detections presented in bold
- Concentrations exceeding California Tier 1 ESL are highlighted
- Concentrations presented represent dissolved metals (filtered) data
- bgs - below ground surface
- California Tier 1 ESL - Commercial/Industrial Land Use Only, Groundwater is not a Current or Potential Source of Drinking Water
- ESL - Environmental Screening Level
- m - meters
- µg/L - micrograms per liter
- U - not detected above laboratory reporting limit

Source: Draft Phase II ESA - Limited Soil and Groundwater Investigation (ACC, 2011)

TABLE 8
Summary of LUFT 5 Metals in Groundwater (October-November 2011)
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street, Oakland, California

Boring ID		OWS-GW	CO Water	CO Water-2	WTank Grab	ETank Grab
Sample Depth (feet bgs)		5	3	3	13	11
Date Collected		10/27/2011	11/9/2011	11/18/2011	10/31/2011	10/31/2011
Comments		Oil Water Pit	Oil Water Line	Oil Water Line	West Tank- West End	East Tank- East End
Metal	California Tier 1 ESL (µg/L)	µg/L	µg/L	µg/L	µg/L	µg/L
Cadmium	0.25	2.0 U	2.0 U	2.0 U	14.7	2.0 U
Chromium	180	10 U	13.0	80.4	866	54.6
Lead	2.5	121	80.4	311	2,050	38.0
Nickel	8.2	52.4	19.0	54.2	1,010	59.6
Zinc	81	121	102	388	3,070	167

Notes:

Detections presented in bold

Concentrations exceeding California Tier 1 ESL are highlighted

Concentrations presented represent total metals (unfiltered) data

bgs - below ground surface

California Tier 1 ESL - Commercial/Industrial Land Use Only, Groundwater is not a

Current or Potential Source of Drinking Water

ESL - Environmental Screening Level

LUFT - Leaking Underground Fuel Tanks

m - meters

µg/L - micrograms per liter

U - not detected above laboratory reporting limit

Source: *Underground Storage Tank & Oil Water Separator Removal Report* (Burns & McDonnell, 2012)

FIGURES



LEGEND

- SIGNIFIES A CLOSED SITE
- LEAKING UNDERGROUND TANK CLEANUP SITES
- OTHER CLEANUP SITES
- MILITARY SITES
- DTSC CLEANUP SITES

NOTE:

SOURCE: [HTTP://GEOTRACKER.WATERBOARDS.CA.GOV](http://geotracker.waterboards.ca.gov)

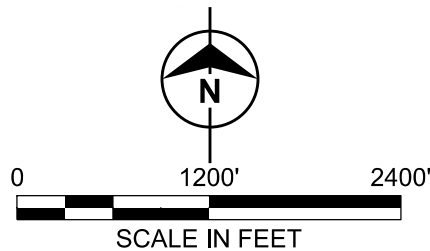


Figure 1
 SITE LOCATION MAP
 ROADWAY EXPRESS
 1708 WOOD STREET
 OAKLAND, CA

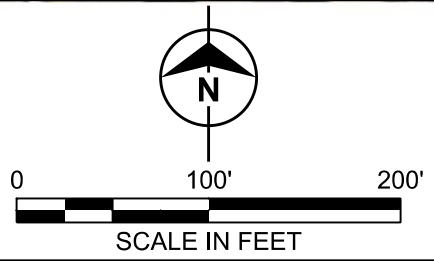
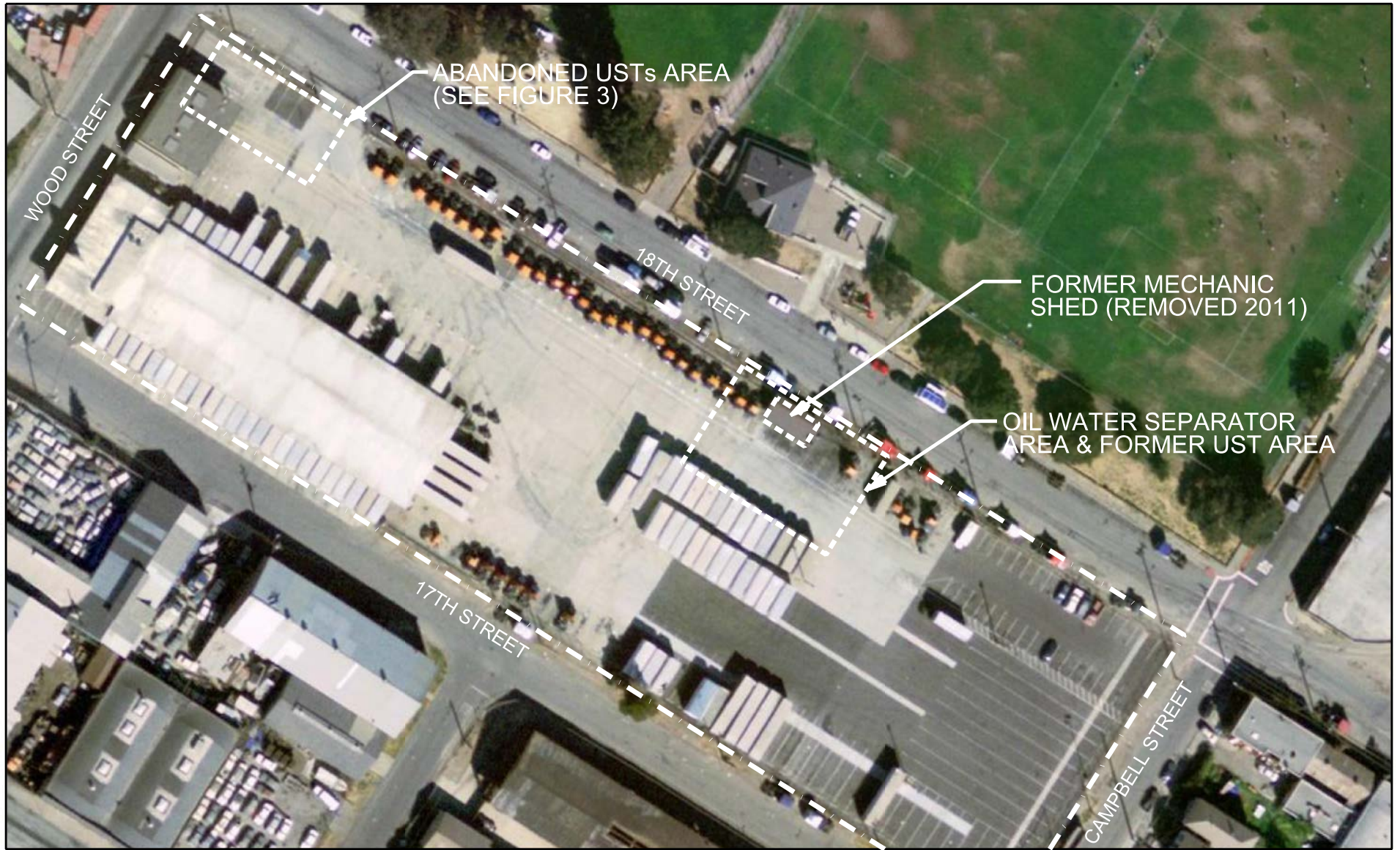


Figure 2
SITE MAP
ROADWAY EXPRESS
1708 WOOD STREET
OAKLAND, CA

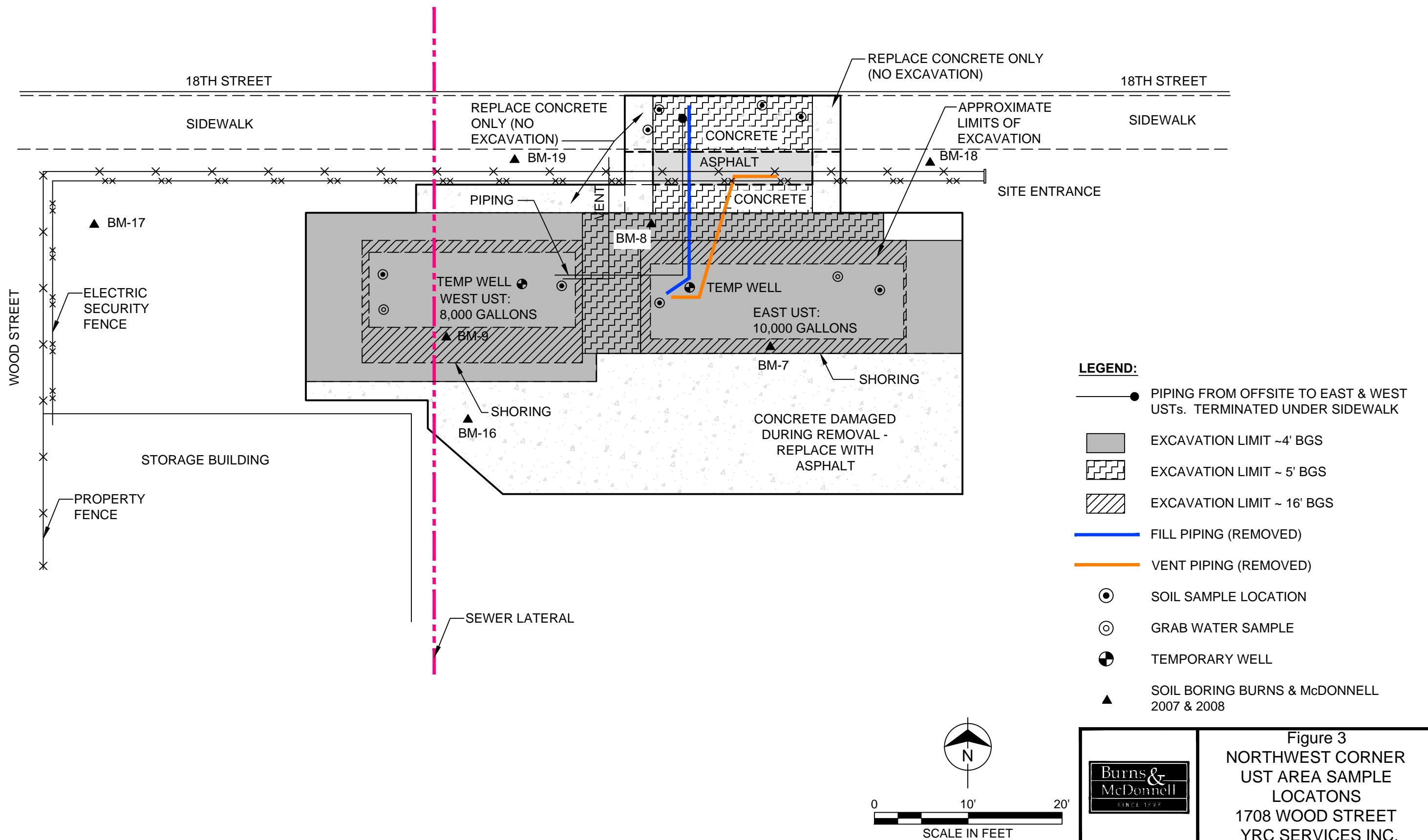
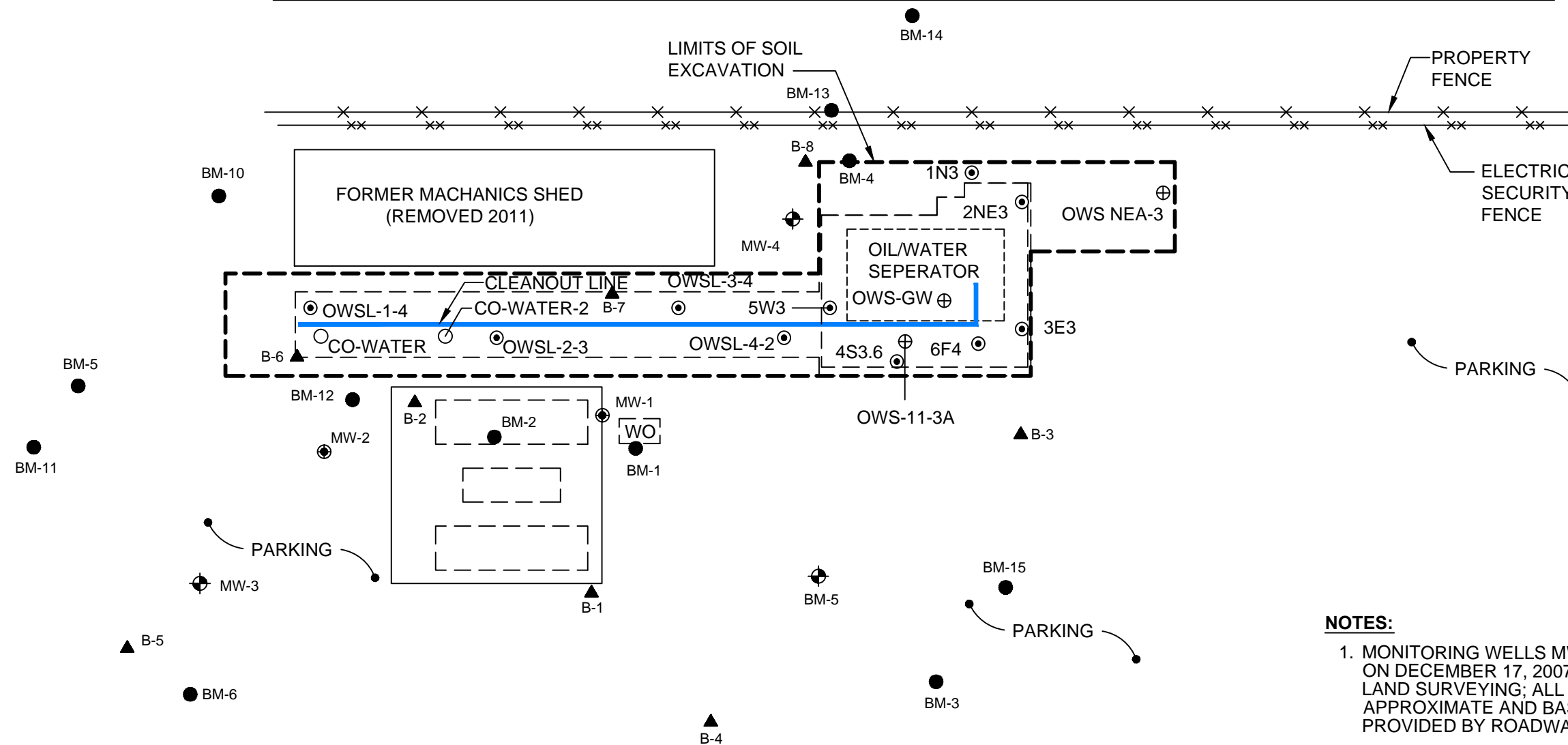


Figure 3
 NORTHWEST CORNER
 UST AREA SAMPLE
 LOCATIONS
 1708 WOOD STREET
 YRC SERVICES INC.

18TH STREET



NOTES:

1. MONITORING WELLS MW-2 THROUGH MW-5 SURVEYED ON DECEMBER 17, 2007 BY LUK AND ASSOCIATES LAND SURVEYING; ALL OTHER LOCATIONS ARE APPROXIMATE AND BASED ON INFORMATION PROVIDED BY ROADWAY EXPRESS.
2. LOCATION OF UNDERGROUND UTILITIES IS APPROXIMATE AND BASED ON USA MARKINGS AND FIELD OBSERVATIONS.
3. 10,000 GALLON GASOLINE AND DIESEL UST REMOVED 1987
2,000 GALLON WASTE OIL REMOVED 1987
OIL WATER SEPARATOR & CLEAN OUT LINE REMOVED NOVEMBER 2011

LEGEND:

- | | | | |
|---|--|---------|---|
| ⊙ | SOIL SAMPLE LOCATION | — | CLEANOUT LINE |
| ⊙ | GROUNDWATER RESAMPLE LOCATION | - - - | EXCAVATION LIMITS/CONCRETE REPLACEMENT |
| ⊕ | SOIL RESAMPLE LOCATIONS | [OWS] | OIL/WATER SEPARATOR |
| ● | SOIL BORING (BURNS & McDONNELL, DECEMBER 2007 AND AUGUST 2008) | [] | ORIGINAL EXCAVATION |
| ⊕ | EXISTING MONITORING WELL | [WO] | WASTE OIL UST REMOVED 1987 (LOCATION APPROXIMATE) |
| ⊕ | REMOVED MONITORING WELL | [] | UST & ISLANDS REMOVED 1987 |
| ▲ | SOIL BORING (BCON ENVIRONMENTAL, JULY 1997) | | |

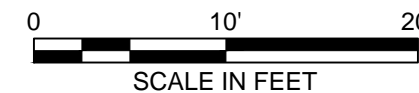


Figure 4
SITE PLAN
CENTRAL EASTERN (OWS)
AREA SAMPLE LOCATIONS
1708 WOOD STREET
YRC SERVICES INC.

APPENDIX A

Summary of Background Concentrations

Table A-1
Background Concentrations of Metals in Soil and Groundwater

EMR Table A-2
Comparison of Background Concentrations of Metals in Bay Area Soils

Table A-1
Background Concentrations of Metals in Soil and Groundwater
YRC Enterprise Services, Inc. - Roadway Express Facility
1708 Wood Street
Oakland, California

Study	Comments	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc	
SOIL (mg/kg)																			
LBNL, 2009	other units	< 6	24	410	1.0	5.6	120	25	63	--	0.42	4.8	272	4.9	2.9	10	90	140	
	Great Valley Group	--	42	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	all	--	--	--	--	--	--	--	--	43	--	--	--	--	--	--	--	--	
	> 5 feet depth	--	--	--	--	--	--	--	--	24	--	--	--	--	--	--	--	--	
ARCADIS Geraghty & Miller, Inc., 2000		0.22	9.1	224	0.7	0.3	118	22	88	50	0.9	2.4	124	0.19	0.14	0.33	84	221	
Hunter, Davis, and Roach, 2005	0-3 feet	12.5	12.7	320.0	1.1	2.3	49.4	22.0	53.3	25.0	0.3	20.0	41.5	11.0	2.1	25.0	88.3	104.0	
	3-15 feet	12.0	12.6	316.0	1.1	2.7	48.9	21.0	52.7	59.2	0.2	20.3	38.8	10.5	2.0	25.0	88.0	125.0	
	>15 feet	13.0	15.0	357.0	1.1	2.5	49.9	20.7	56.0	20.0	0.3	21.0	41.8	11.0	2.0	25.0	86.0	93.2	
		12.5	10.0	257.0	1.2	1.8	49.6	24.3	51.5	11.7	0.3	20.0	43.8	11.5	2.4	25.0	90.7	99.6	
Minimum		0.22	9.1	224	0.7	0.3	48.9	20.7	51.5	11.7	0.2	2.4	38.8	0.19	0.14	0.33	84	93.2	
Maximum		13	42	410	1.2	5.6	120	25	88	59.2	0.9	21	272	11.5	2.9	25	90.7	221	
Minimum (EMR Table A-2)		1.5	1.2	41	0.29	0.27	10	6.5	5.4	4.8	0.07	0.33	16	< 0.25	0.2	< 0.25	22	33	
Maximum (EMR Table A-2)		7.1	31	411	1.1	3.3	142	25.5	100	65	0.6	11.4	144	7	2.2	42.5	90	282	
Background Range (Soil)		0.22 - 13	1.2 - 42	41 - 411	0.29 - 1.2	0.27 - 5.6	10 - 142	6.5 - 25.5	5.4 - 100	4.8 - 65	0.07 - 0.9	0.33 - 21	16 - 272	0.19 - 115	0.14 - 2.9	0.33 - 42.5	22 - 90.7	33 - 282	
GROUNDWATER (µg/L)																			
Hunter, Davis, and Roach, 2005		146	35	630	--	6	810	25	50	50	0.5	79	455	31	15	200	110	220	

Notes:

mg/kg - milligrams per kilogram

µg/L - micrograms per liter

ARCADIS Geraghty & Miller, Inc., 2000 - ARCADIS Geraghty & Miller, Inc. *Ambient Soil Concentrations Technical Memorandum, United States Army Reserve Center, Rio Vista, California*. December, 2000.

Hunter, Davis, and Roach, 2005 - Philip M. Hunter, Brian K. Davis, and Frank Roach. *Inorganic Chemicals in Ground Water and Soil: Background Concentrations at California Air Force Bases*. March 10, 2005.

LBNL, 2009 - Lawrence Berkeley National Laboratory Environmental Restoration Program. *Analysis of Background Distributions of Metals in Soil at Lawrence Berkeley National Laboratory*. June, 2002; Revised April, 2009.

Table A-2
Comparison of Background Concentrations of Metals in Bay Area Soils
Hookston Station
Pleasant Hill, California

Study	Number of Samples	Formation	Calculation	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
LBNL, 1995	498	--	95% UCL	5.5	19.1	323.6	1.0	2.7	99.6	22.2	69.4	16.1	0.4	7.4	119.8	5.6	1.8	27.1	74.3	106.1
	97	Colluvium & Fill	95% UCL	5.9	14	358.8	0.9	1.5	91.4	22	59.6	14.5	0.3	3.2	120.2	5.6	1.7	42.5	78.2	91.5
	97	Great Valley Group	95% UCL	6.3	31	248.5	1.0	3.2	59	25.5	99.7	21.5	0.6	3.8	69.7	4.8	2.2	8.7	69.3	135.9
	101	Moraga Formation	95% UCL	6.1	9.3	154.1	0.8	2.6	142.2	23.1	54.1	8.9	0.3	3.8	100.4	4.7	2.0	38.9	90.1	84.7
	184	Orinda Formation	95% UCL	5.2	17.8	411.2	1.1	3.3	95.2	20.6	66.9	14.8	0.3	11.4	144.3	7.0	1.9	19.8	69.3	98.3
BMW, 1994	< 150	Fill	Geometric mean	1.98	4.32	40.6	0.29	0.43	16.32	6.45	5.44	4.79	0.07	0.76	42.85	1.36	0.35	--	22.19	32.90
		Fill	Geometric std. dev.	1.74	1.83	1.62	1.47	2.05	9.38	1.71	6.62	2.93	1.76	1.98	1.50	2.93	1.57	--	1.54	1.54
Scott, 1991	~150	Alluvium	Arithmetic mean	--	2.86	--	0.88	--	51.28	--	35.63	11.43	--	--	73.53	--	--	--	--	65.27
			Std. dev.	--	2.61	--	0.55	--	20.77	--	11.85	4.66	--	--	--	27.15	--	--	--	--
MLH, 1991	--	Off-Site Background (2 Rounds)	Arithmetic mean	--	8.3	--	--	1.0	10.0	--	22	32.4	0.14	--	16	--	--	--	--	65
				--	< 4.1	--	--	< 0.9	16.4	--	7.2	61	< 0.11	--	18	--	--	--	--	67.2
D&M, 1989a	4	Upgradient	Arithmetic mean	--	5.15	115	--	--	42.5	10	17.5	13.3	0.5	--	42.5	--	--	--	35	37.5
D&M, 1989b	26	Upgradient	Arithmetic mean	--	1.9	127.3	--	--	44.6	11.5	17.7	< 10	0.2	--	45.4	--	--	--	36.2	41.9
SECD, 1992	5	Clay / Loam	Arithmetic mean	2.5	8.48	228	0.5	0.83	72.6	9.53	37	65	0.14	1.74	43	< 0.25	< 0.25	< 0.25	46.9	281.6
PRC, 1996	20	Fill	95% UCL	1.5	8.4	145	0.72	0.27	95	16	72	59	0.6	0.33	96	--	0.2	--	70	152
Author Unknown	10	Background Soil	Arithmetic mean	--	1.2	125	0.35	--	33.4	8.8	22.7	7.4	--	--	22.5	--	--	--	27.8	39.9
			Std. dev.	--	1.8	145	0.17	--	6.5	3.1	16.7	2.1	--	--	--	15.7	--	--	--	6.3
Background Concentration Ranges				1.5 - 7.1	1.2 - 31	41 - 411	0.29 - 1.1	0.27 - 3.3	10 - 142	6.5 - 25.5	5.4 - 100	4.8 - 65	0.07 - 0.6	0.33 - 11.4	16 - 144	<0.25 - 7	0.2 - 2.2	<0.25 - 42.5	22 - 90	33 - 282

References:

Author Unknown. *Results of Chemical Testing on Background Soil Samples, Area 2 Investigation Completion Report, Roberts Landing Development Site, San Leandro, California.* 1994

BMW = Burns and McDonnell Waste Consultants, Inc. *San Francisco International Airport Background Metals Concentrations in Soil.* December 1994.

D&M = Dames and Moore, Inc. *Report - Phase II Remedial Investigation, 1455 Factor Avenue Site, San Leandro, California.* 3 August 1989.

D&M = Dames and Moore, Inc. *Report - Phase II Remedial Investigation, 750 139th Avenue Site, San Leandro, California.* 13 October 1989.

LBNL = Lawrence Berkeley National Laboratory, University of California, Environmental Restoration Program. *Protocol for Determining Background Concentrations of Metals in Soil at Lawrence Berkeley National Laboratory.* August 1995.

MLH = McLaren-Hart. *Remedial Investigation Report - Hercules Properties, Inc., Hercules, California.* 15 March 1991.

PRC = PRC Environmental Management. *Final Remedial Investigation Report - Fleet and Industrial Supply Center Oakland, Alameda Facility / Alameda Annex Site, Alameda California.* January 1996.

Scott = Scott, Christina Marie. *Background Metals Concentrations in Northern Santa Clara County, California. Master's Thesis, University of San Francisco.* December 1991.




SECD = SEC Donahue Environment and Infrastructure. *Sitewide Remedial Investigation, Pacific States Steel Corporation, Union City, California.* 3 December 1992.

UCL = Upper confidence level

APPENDIX B

ACC Figure 1



-  **Soil and Groundwater Sample Collected**
-  **Groundwater Sample Collected**
-  **Soil Sample Collected**

Title **Sample Location Map**
1708 Wood Street
Oakland, California

Figure Number: 1	Drawn By: JS
Project Number: 6470-034.01	Date: 2/6/11

