

METROVATION

November 15, 2017

Mr. Jonathan Sanders
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

RECEIVED

By Alameda County Environmental Health 3:40 pm, Nov 20, 2017

Re: Site Management Plan
Terradev Jefferson Property – 645 4th Street, Oakland CA
Fuel Leak Case R00003001

Dear Mr. Sanders,

Attached please find the Site Management Plan prepared by our consultant, APEX (formerly SGI), for the above referenced location. I declare under penalty of perjury that to the best of my knowledge the information/recommendations contained in the attached report is/are true.

The SMP was prepared at the Department's request to provide basic guidance for upcoming facility improvement work in the spaces adjoining 4th Street near the location of the former UST. Work planned for the former Urban Legend Winery (621 4th) in preparation for its occupation by Temescal Brewery may include limited interior shallow subsurface penetrations for brewery infrastructure. The plans are not yet available; the SMP was prepared to provide guidance in the event work is planned for areas proximal to the UST.

As discussed during our meeting with Dilan Roe a few weeks back, we are also preparing a workplan for the construction of a passive venting system beneath the northern portion of 645 4th Street floor nearest the UST. While results of analysis of indoor air samples do not necessarily show a correlation between subsurface vapor concentrations and indoor air quality, given that the tenant is moving out and we have access to this area of the property the construction of a passive venting apparatus is a useful conservative measure to deploy.

I think it would be useful for you to connect with my contracted environmental manager, Markus Niebanck of Amicus. I recognize you must have many demands on your time presently having just come on board. I'll ask Markus to drop you a line in the coming weeks.

Most sincerely,



Sara May

Cc Greg McIver, APEX
Markus Niebanck, Amicus

Attachment – APEX SMP

SITE MANAGEMENT PLAN

Terradev Jefferson LLC Property
645 4th Street
Oakland, California

093-TERRA-001

Prepared For:

METROVATION
One of a kind, always the best

Metrovation, LLC
580 Second Street, Suite 260
Oakland, California 94607

Prepared By:



256 Buena Vista Street, Suite 200
Grass Valley, CA 95949

November 20, 2017

Prepared By:

A handwritten signature in blue ink, appearing to read 'Adam Brown'.

Adam Brown
Project Scientist

Reviewed By:

A handwritten signature in blue ink, appearing to read 'Greg McIver'.

Greg McIver
Principal Scientist



Erik Harz, P.G.
Project Geologist

TABLE OF CONTENTS

	PAGE
LIST OF FIGURES	ii
LIST OF TABLES	ii
1.0 INTRODUCTION	1-1
1.1 Site Location and Description	1-1
1.2 Purpose and Objective	1-1
2.0 Site history	2-1
2.1 Background.....	2-1
2.2 Geology/Hydrogeology.....	2-1
3.0 Site MANAGEMENT ACTIVITIES	3-1
3.1 Designated Manager	3-1
3.2 Soil Management Plan Designated Area	3-1
3.3 Description of Near Future Planned Activity.....	3-1
3.4 Description of Possible Future Subslab Activity	3-1
3.5 Procedures for Monitoring Near-Term Activity	3-2
3.6 Evaluation and Determination of Appropriate Precautions for Future Activity.....	3-2
3.7 Implementation of Site Mangement Plan.....	3-2
3.8 Limitations.....	3-2

LIST OF ATTACHMENTS

Attachment A Figures

Attachment B Tables

1.0 INTRODUCTION

On behalf of Metrovation, LLC (Metrovation or Property Owner), Apex Companies, LLC. (Apex) is submitting this Site Management Plan (SMP) for the Terradev Jefferson LLC Property located at 645 4th Street in Oakland, California (the Site).

1.1 Site Location and Description

The project Site is situated southwest of the intersection of 4th Street and Martin Luther King Jr. Way, Oakland, California. The Site consists of a single story commercial building bordered closely on the sides and rear by other commercial buildings in a commercial/industrial neighborhood along the San Francisco Bay-Margin.

1.2 Purpose and Objective

The purpose of this SMP is to describe procedures and protocols to ensure the appropriate handling of hydrocarbon-containing soil at the Site during near-term and future subsurface activities. Near term activities include the construction of a passive soil venting system in the area nearest the former underground storage tank (UST) and tenant improvement activity in the tenant spaces along 4th Street (the tenant space immediately adjacent to the UST and the former wine/future brewery space to the immediate east). These improvement activities may include shallow utility trenching.

2.0 SITE HISTORY

2.1 Background

In 2006 during building renovation a single-walled steel UST was discovered beneath the sidewalk immediately adjacent to the front of the building. Due to building structural considerations the UST was abandoned in place. The commercial building is currently occupied by the Children's Hospital Oakland Outpatient Clinic.

Under Alameda County Environmental Health Department (ACEHD) oversight, Terradev Jefferson LLC Property has conducted site characterization and remedial activities beginning in 2009. Specific compounds, and constituents of potential concern (COPCs) that have been detected in soil or groundwater at the source area include: total petroleum hydrocarbons as diesel (TPHd) and gasoline (TPHg), benzene, toluene, ethylbenzene, and xylene (BTEX), methyl tert butyl ether (MtBE), tert butyl alcohol (TBA), 1,2-dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB) and naphthalene in soil, soil gas and groundwater beneath the Site.

Remediation activities have included two separate high-vacuum dual-phase extraction events completed in September/October 2010 and July 2012. Extraction operations were completed near the abandoned in place former UST. During the two events, approximately 340 to 423 pounds of petroleum hydrocarbons were removed. Historical test/remediation points are shown on Figure 2 included in Attachment A.

2.2 Geology/Hydrogeology

Soil types observed below the Site are sands and clays. The upper six feet generally consists of a brown sand, which has been interpreted as fill material. Native soil below the fill material consists of a gray and yellow-brown sandy clay from ~6-7 feet below ground surface (bgs), a mottled red-brown and gray clayey sand from ~7-14 feet bgs, a brown sand from ~14-16 feet bgs and gray clayey sand from ~16-20 feet bgs, the maximum depth explored. Static groundwater is at approximately nine feet bgs and generally flows to the south and southwest towards the Oakland Inner Harbor.

3.0 SITE MANAGEMENT ACTIVITIES

This section presents soil management guidance that shall be relied upon by parties involved in planned near-term and future building-related activity that may require slab penetration and/or other exposure to material beneath the building potentially containing petroleum hydrocarbon contamination.

3.1 Designated Manager

Metrovation shall bear responsibility for initial contractor briefing and notification of the project environmental consultant. Should any sub-slab work be planned in the SMP Designated Area (see next section), the project consultant shall be engaged to evaluate the nature of the work and determine whether special contractor training/certification is required.

3.2 Soil Management Plan Designated Area

Contractors or personnel working in the general vicinity of the UST and tenant spaces that may be situated above soil/groundwater potentially affected by the release from the UST are required to adhere to this SMP.

3.3 Description of Near Future Planned Activity

The only presently planned activity that will occur in the SMP Designated Area is the completion of a passive soil venting system in the immediate vicinity of the former UST in the building interior. This installation shall take place in late November/December after the current tenant vacates the space. The system is in the design phase presently with a Work Plan to be submitted for County review/approval in November 2017.

Tenant improvement in the building adjoining to the east will include improvements associated with the construction of a brewery/tasting room in a space previously occupied by a winery and tasting room. While plans for these improvements have not yet been prepared, it is anticipated that limited trenching for shallow brewery tank-area drainage may occur in the building interior, some distance south/southeast of the former UST.

3.4 Description of Possible Future Subslab Activity

The buildings will operate as tenanted spaces for the foreseeable future; no large-scale redevelopment work is planned. The building plumbing and utility service is completed with no plans for upgrade or reconfiguration. Potential activity that may require slab penetration is not anticipated, but should such activity occur it would likely be in association with utility service or repair.

This SMP will be revised and updated near the completion of UST release-related activity such that it becomes a stand-alone guide to be implemented in association with future sub-slab work or tenant space upgrades.

3.5 Procedures for Monitoring Near-Term Activity

Near-term activities include the installation of a sub-slab venting system and vapor barrier. Limited intrusive activities will include the removal of concrete and gravel foundation base. An organic vapor monitor (OVM) should be used during intrusive activities to monitor potential volatilization of petroleum hydrocarbon related compounds. OVM monitoring results will be compared to action levels in the project health and safety plan. If necessary, the work area will be properly ventilated during construction activities (i.e. exhaust fan, open doors) to mitigate exposure associated with petroleum hydrocarbon related compounds in the breathing zone.

3.6 Evaluation and Determination of Appropriate Precautions for Future Activity

Appropriate precautions for future activities will be described in a revised SMP. Property owner shall notify environmental consultant should any slab-penetrating activity be planned for implementation before the update is published.

3.7 Implementation of Site Management Plan

The property owner shall oversee implementation of this SMP at the Site. If it is determined that work will occur in the SMP Designated Area it will be the responsibility of the contractor working in cooperation with the property owner and environmental consultant to adhere to this SMP, project specifications, and site safety. The contractor is also responsible for providing a copy of this SMP to its subcontractors as appropriate.

This SMP was developed primarily to address upcoming activity. The SMP will be updated concurrent with the future application for environmental case closure, and will be expanded to accommodate.

- Change in property use (e.g., addition of buildings to the site).
- Changes in regulatory requirements.
- Change in environmental conditions.
- Intrusive activity that is not addressed by this SMP.
- New chemical toxicity information for chemicals present at the Site.

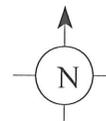
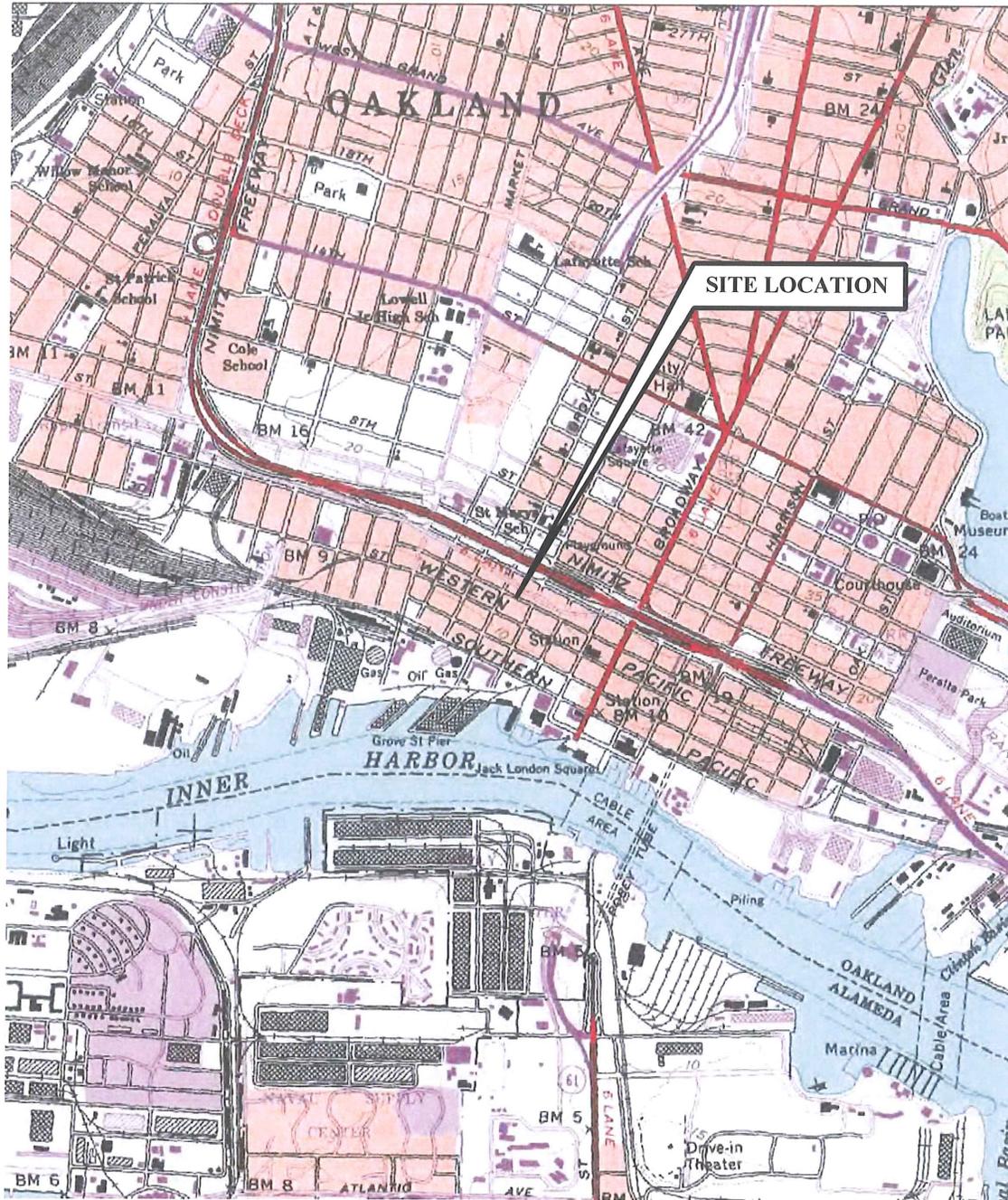
3.8 Limitations

This SMP was prepared to address petroleum hydrocarbons present in the soil and groundwater at the Site and current known site conditions, regulations, and laws. This SMP does not address issues related to other chemicals or future site conditions that may be encountered during construction projects, including but not limited to, demolition and construction debris, asphalt, concrete, and asbestos-containing materials. If such materials are encountered during a construction project, the property owner shall be immediately notified. Contractors and workers are responsible for complying with all applicable laws pertaining to the handling and disposal of these materials.

The Site-related activities may be subject to federal, state, and local laws and regulations, including those published by USEPA, California Environmental Protection Agency (Cal-EPA) and the City of Oakland. These regulations address issues such as health and safety, hazardous waste, dust generation, storm water, and community right-to-know. It is the responsibility of the Property Owner and contractors involved to ensure that all construction and maintenance activities abide by current applicable laws and regulations.

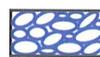
Apex-SGI disclaims any responsibility for any unauthorized use of this SMP. It is understood that while this SMP is intended to provide guidance and establish a framework for the management of petroleum hydrocarbons present in the soil and groundwater to protect human health and the environment, this SMP shall not create any warranties or obligations to the property owner as to implementation, adequacy, or success of protective measures under this SMP.

ATTACHMENT A
FIGURES



SOURCE: MyTopo.com

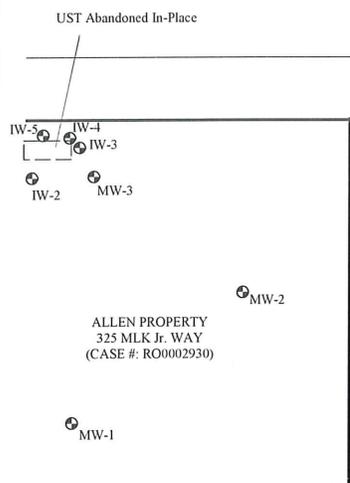
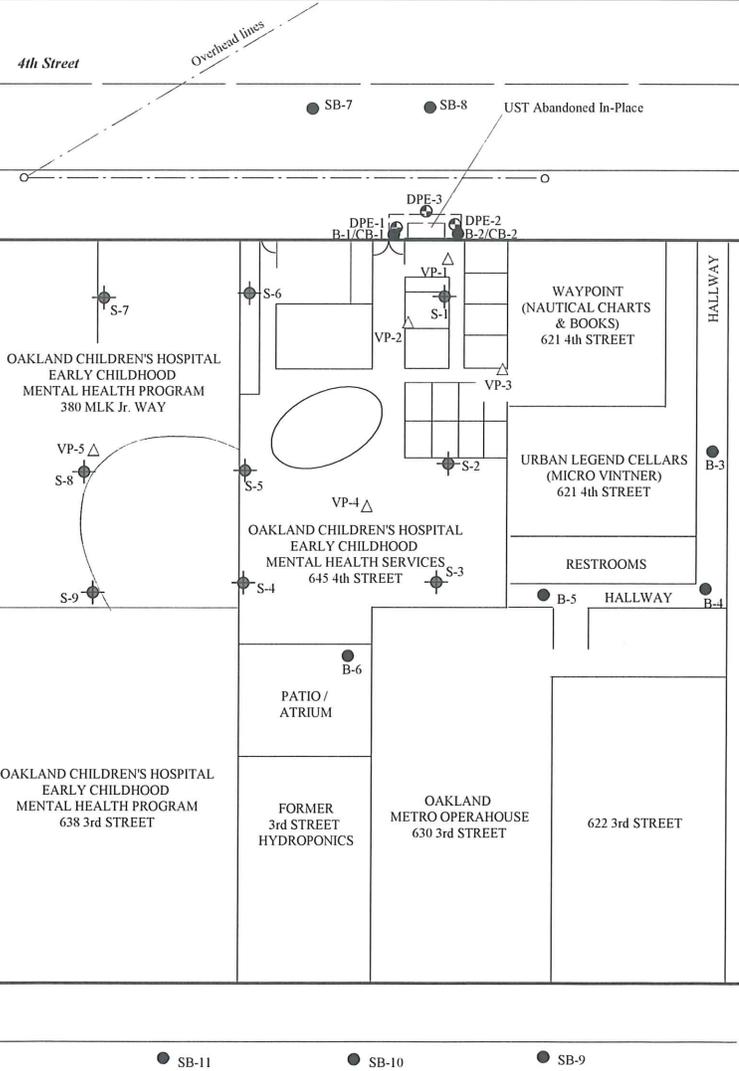
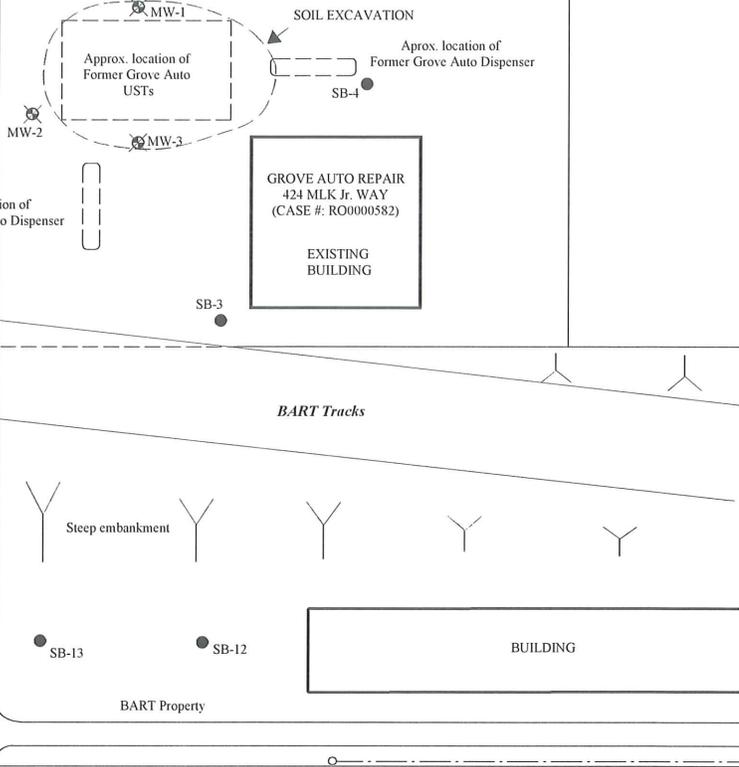
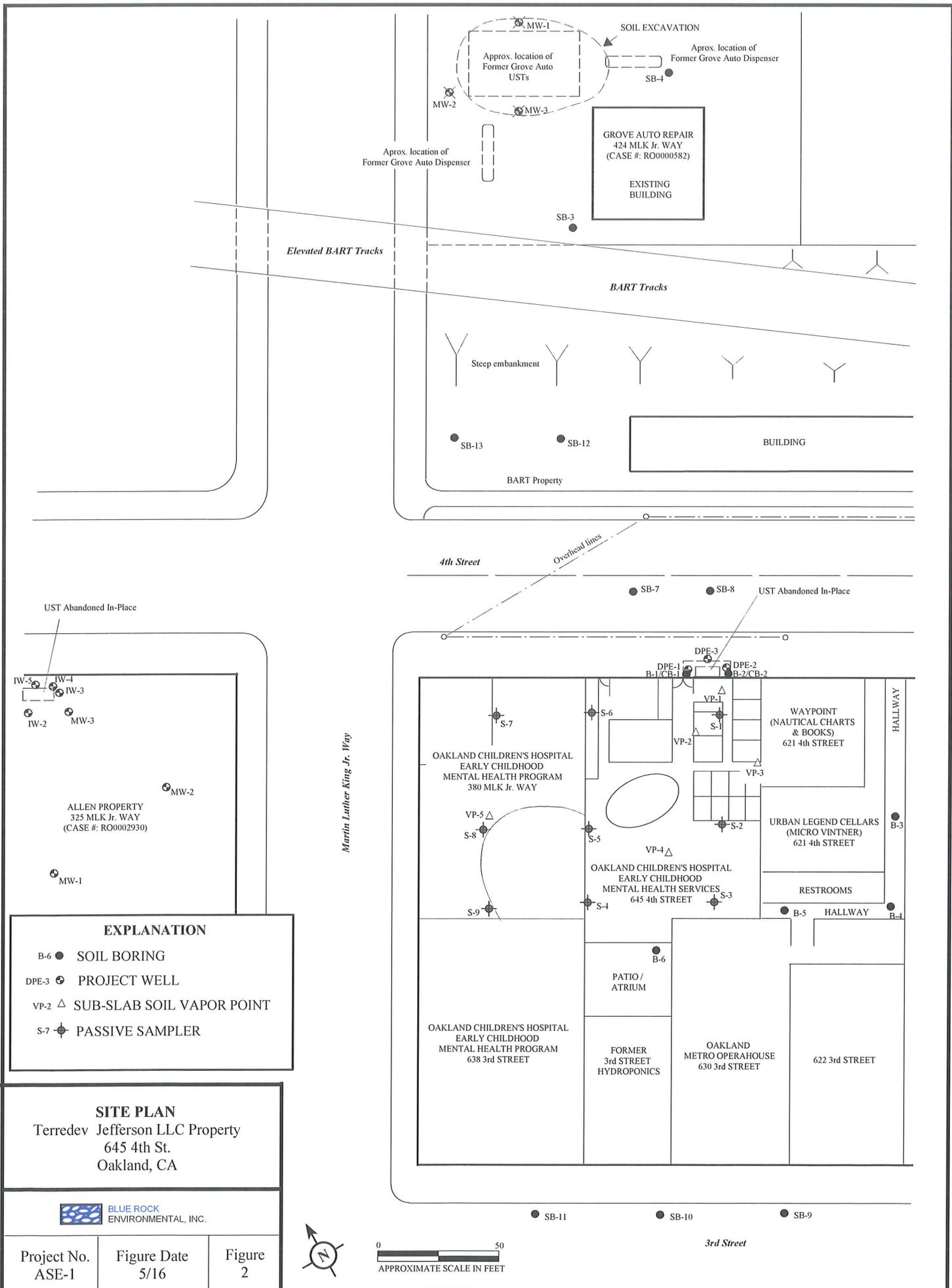
SITE LOCATION MAP
 Terradev Jefferson LLC Property
 645 Fourth St.
 Oakland, CA

 **BLUE ROCK**
 ENVIRONMENTAL, INC.

Project No.
 ASE-1

Figure Date
 10/10

Figure
 1



ATTACHMENT B

TABLES

TABLE 2
Soil Sample Analytical Data
TerraDev Jefferson, LLC Property
645 4th Street
Oakland, CA

Sample ID	Depth (ft bgs)	Sample Date	TPHd (mg/kg)	TPHd w/SGCU (mg/kg)	TPHg (mg/kg)	B (mg/kg)	T (mg/kg)	E (mg/kg)	X (mg/kg)	MTBE (mg/kg)	TBA (mg/kg)	DIPE, ETBE, TAMI (mg/kg)	1,2-DCA (mg/kg)	EDB (mg/kg)	Napht. (mg/kg)
UST Removal Samples															
8795-EX-W-9'	9	8/23/06	<120	---	10,000	130	1,000	230	1,200	<12	<100	all<12	---	---	---
8795-EX-E-9'	9	8/23/06	<25	---	920	6.8	55	18	110	<1.2	<10	all<1.2	---	---	---
Investigation Samples															
DPE-1-7.5	7.5	9/20/10	810^	---	6,500	14	320	180	980	<0.50	<2.5	---	<0.50	0.50	---
DPE-1-12	12	9/20/10	260^	---	2,300	26	160	45	240	0.71	<1.5	---	<0.30	<0.30	---
DPE-1-15	15	9/20/10	92^	---	770	10	53	15	80	0.39	<0.50	---	0.11	<0.090	---
DPE-2-6	6	9/20/10	15	---	1.2	<0.0050	0.0054	<0.0050	0.021	<0.0050	<0.0050	---	<0.0050	<0.0050	---
DPE-2-11	11	9/20/10	1,200^	---	160,000	1,400	10,000	3,300	19,000	<0.25	<1.5	---	<0.25	1.8	---
DPE-2-15	15	9/20/10	66^	---	430	3.8	25	8.3	47	<0.50	<2.5	---	<0.050	<0.50	---
DPE-3-7	7	9/20/10	260^	---	860	2.1	37	19	100	<0.10	<0.50	---	<0.10	<0.10	---
DPE-3-10	10	9/20/10	800^	---	8,900	78	580	180	980	<0.25	<1.5	---	<0.25	0.82	---
CB-1-7.5	7.5	2/18/13	1.2*	---	<1.0	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	---	---	<0.0050	<0.0050	---
CB-1-9	9	2/18/13	110^	---	1,200	2.8	55	27	150	<0.25	---	---	<0.25	<0.25	---
CB-1-12	12	2/18/13	880^	---	14,000	100	850	180	1,400	0.53	---	---	<0.25	0.86	---
CB-1-15	15	2/18/13	89^	---	1,000	8.4	62	15	100	<0.050	---	---	<0.050	<0.050	---
CB-2-9	9	2/18/13	120^	---	840	0.44	17	20	110	<0.15	---	---	<0.15	<0.15	---
CB-2-11	11	2/18/13	110^	---	2,700	23	160	48	260	<0.40	---	---	<0.40	<0.40	---
CB-2-15	15	2/18/13	45^	---	380	3.9	18	6.6	34	<0.050	---	---	<0.050	<0.050	---
B-6-6'	6.5	1/11/14	340^	350^	1,700	0.13	8.0	12	91	<0.050	<0.25	---	<0.050	<0.050	---
B-6-10.5'	10.5	1/11/14	280^	280^	1,500	4.1	48	26	130	<0.25	<1.5	---	<0.25	<0.25	---
SB7-8.5/9	8.5-9	12/29/14	1.2^	---	4.0	0.16	0.50	0.081	0.50	<0.0050	<0.0050	---	<0.0050	0.0070	0.043
SB7-10.5/11	10.5-11	12/29/14	1,400^	---	19,000	150	1,100	330	1,800	<0.25	<1.5	---	<0.25	2.5	99
SB7-12.5/13	12.5-13	12/29/14	310^	---	3,600	29	200	59	330	<0.090	<1.5	---	<0.090	0.46	23
SB-8-8.5/9	8.5-9	12/29/14	750^	---	6,600	30	290	120	580	<0.25	<1.5	---	<0.25	0.38	38
SB-8 11.5/12	11.5-12	12/29/14	170^	---	1,400	6.4	54	22	130	<0.25	<1.5	---	<0.25	<0.25	10
SB-8 14.5	14.5	12/29/14	<1.0	---	<1.0	0.026	0.060	0.011	0.065	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-9-13	13	4/20/16	---	9.5*	<0.994	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-9-14	14	4/20/16	---	16.3*	<0.994	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-10-13	13	4/20/16	---	20.0*	<0.982	<0.0050	<0.0050	<0.0050	<0.0098	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-10-14	14	4/20/16	---	12.8*	<0.984	<0.0050	<0.0050	<0.0050	<0.0098	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-11-13	13	4/20/16	---	13.8*	<0.992	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-11-14	14	4/20/16	---	12.8*	<0.998	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-12-9	9	4/20/16	---	5.5*	<0.998	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-12-12	12	4/20/16	---	14.9*	<0.982	<0.0049	<0.0049	<0.0049	<0.0098	<0.0049	<0.0049	---	<0.0049	<0.0049	<0.0049
SB-13-10.5	10.5	4/20/16	---	11.6*	<0.992	<0.0050	<0.0050	<0.0050	<0.0099	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050
SB-13-13	13	4/20/16	---	14.6*	<0.998	<0.0050	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	---	<0.0050	<0.0050	<0.0050

Notes:

- ft bgs feet below ground surface
- mg/kg milligrams per kilogram
- TPHd total petroleum hydrocarbons as diesel by EPA Method 8015M or 8015B, w/SCGCU = analysis performed after silica-gel clean-up.
- TPHg total petroleum hydrocarbons as gasoline by EPA Method 8260B
- BTEX benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B
- MTBE, TBA, ETBE, methyl tert-butyl ether, tert-butanol, ethyl tert-butyl ether, di-isopropyl ether, tert-amyl methyl ether by EPA Method 8260B,
- DIPE, TAME
- 1,2-DCA, EDB 1,2-dichloroethane, 1,2-dibromoethane by EPA Method 8260B.
- µg/L Micrograms per liter.
- <### Not detected at or above the indicated reporting limit.
- ^ Laboratory Flag: Hydrocarbons are lower-boiling than typical Diesel Fuel
- * Laboratory Flag: Hydrocarbons are higher-boiling than typical Diesel Fuel
- Data not available, not monitored, or not sampled

TABLE 3
Groundwater Analytical Data
 Terradev Jefferson, LLC Property
 645 4th Street
 Oakland, CA

Sample ID	Sample Date	TOC (ft MSL)	DTW (ft)	LNAPL (ft)	GWE (ft MSL)	TPHd (µg/L)	TPHd w/SGCU (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	TBA (µg/L)	1,2-DCA (µg/L)	EDB (µg/L)	Napht. (µg/L)
Grab Groundwater Samples																	
B-1-GW*	7/10/09	--	~9.5	--	--	5,300	--	78,000	15,000	13,000	1,700	10,500	570	--	--	--	--
B-2-GW*	7/10/09	--	~9.5	--	--	2,300	--	60,000	13,000	13,000	890	4,800	120	--	--	--	--
B-3	1/10/14	--	~12	--	--	58#	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--
B-4	1/10/14	--	~12	--	--	67#	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--
B-5	1/10/14	--	~12	--	--	110#	<50	110	1.2	1.4	0.65	4.5	2.7	200	43	<0.50	--
B-6 (2)	1/11/14	--	~11	--	--	5,200^	360^	84,000	1,800	7,600	2,400	12,000	5,100	180J	110	<20	--
SB-7	12/29/14	--	~9	--	--	60,000^	--	250,000	15,000	34,000	4,000	20,000	<40	<200	130	240	1,000
SB-8	12/29/14	--	~9	--	--	16,000^	--	180,000	9,100	22,000	3,000	16,000	<40	<200	130	140	1,200
SB-9	4/20/16	--	~12.5	--	--	--	<48	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<5.0	<0.50	<0.50	<0.50
SB-10	4/20/16	--	~12.5	--	--	--	<49	<50	<0.50	<0.50	<0.50	<1.5	<0.50	<5.0	<0.50	<0.50	<0.50
SB-11	4/20/16	--	~12	--	--	--	<49	182	<0.50	<0.50	<0.50	<1.5	81.5	<5.0	<0.50	332	<0.50
SB-12	4/20/16	--	~11.2	--	--	--	<50	61.8	0.58	4.0	1.3	7.5	<0.50	<5.0	<0.50	<0.50	0.86
Monitoring Well Data																	
DPE-1	9/22/10	15.81	9.21	0.00	6.60	<4,000 (1)	--	120,000	25,000	18,000	3,300	17,000	320	320	620	<40	--
Screen	9/28-10/3/10	15.81	--	--	--	5-day HVDPE Remedial Event											
~8' - 15'	10/18/10	15.81	9.26	sheen	6.55	<4,000 (1)	--	97,000	15,000	20,000	1,600	11,000	490	270	390	<40	--
	1/20/11	15.81	8.56	sheen	7.25	<3,000 (1)	--	83,000	12,000	16,000	2,000	11,000	270	<200	220	<40	--
	7/6/12	15.81	8.85	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/9-7/24/12	15.81	--	--	--	15-day HVDPE Remedial Event											
	8/12/12	15.81	9.03	0.00	6.78	<2,000 (1)	--	71,000	7,500	9,800	1,000	6,500	280	89	190	<15	--
	2/11/13	15.81	8.74	0.00	7.07	<3,000 (1)	--	81,000	9,400	14,000	1,800	10,000	240	110	210	<15	--
	1/10/14	15.81	9.84	0.00	5.97	1,600^	56^	98,000	14,000	13,000	2,100	12,000	270	200	270	<25	--
DPE-2	9/22/10	16.01	9.44	0.00	6.57	<4,000 (1)	--	110,000	21,000	18,000	3,100	14,000	200	260	540	110	--
Screen	9/28-10/3/10	16.01	--	--	--	5-day HVDPE Remedial Event											
~8' - 15'	10/18/10	16.01	9.48	sheen	6.53	<5,000 (1)	--	84,000	11,000	16,000	1,600	9,200	77	<200	220	77	--
	1/20/11	16.01	8.77	sheen	7.24	<5,000 (1)	--	94,000	12,000	19,000	2,500	13,000	64	<200	220	88	--
	7/6/12	16.01	9.06	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/9-7/24/12	16.01	--	--	--	15-day HVDPE Remedial Event											
	8/12/12	16.01	9.27	0.00	6.74	<2,000 (1)	--	70,000	9,900	16,000	1,700	9,600	54	<200	160	56	--
	2/11/13	16.01	8.95	0.00	7.06	<4,000 (1)	--	60,000	7,300	9,500	1,400	7,000	34	<90	120	<20	--
	1/10/14	16.01	10.08	0.00	5.93	2,800^	<50	100,000	17,000	15,000	2,400	11,000	120	100	220	27	--
DPE-3	9/22/10	15.87	9.43	0.00	6.44	insufficient water column for sampling (i.e. <0.5-ft)											
Screen	9/28-10/3/10	15.87	--	--	--	5-day HVDPE Remedial Event											
~6' - 10'	10/18/10	15.87	9.35	0.00	6.52	insufficient water column for sampling (i.e. <0.5-ft)											
	1/20/11	15.87	8.51	0.13	7.36	no groundwater sample collected, LNAPL present.											
	7/6/12	15.87	8.65	0.00	--	--	--	--	--	--	--	--	--	--	--	--	--
	7/9-7/24/12	15.87	--	--	--	15-day HVDPE Remedial Event											
	8/12/12	15.87	9.02	sheen	6.85	<200,000 (1)	--	190,000	1,400	7,800	3,700	29,000	27	120	40	130	--
	2/11/13	15.87	8.34	sheen	7.53	<40,000 (1)	--	130,000	4,700	9,000	1,900	25,000	<40	<200	54	80	--
	1/10/14	15.87	Dry	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

- Screen: Well screen depth interval.
- TOC: Top of casing relative to feet above mean sea level (ft MSL) (ref NAVD88).
- DTW: Depth to water (for borings DTW shows "depth to water" and "depth to bottom of boring")
- LNAPL: Light non-aqueous phase liquid petroleum, "sheen" is an immeasurable thickness (i.e. <0.01-ft)
- GWE: Groundwater Elevation (TOC-DTW) in ft MSL. (This does not account for LNAPL thickness, if present).
- TPHd: Total petroleum hydrocarbons as diesel by EPA Method 8015M, *8015B. SGCU = Silica-gel cleanup prior to analysis.
- TPHg: Total petroleum hydrocarbons as gasoline by EPA Method 8260B, *8015B.
- BTEX: Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8260B, *8021B.
- Note: total xylenes equal the sum of separate isomers reported for the 7/09 samples.
- MTBE: Methyl tert-butyl ether by EPA Method 8260B, * 8021B.
- TBA: Tert-butanol by EPA Method 8260B.
- 1,2-DCA, EDB: 1,2-dichloroethane, 1,2-dibromoethane by EPA Method 8260B.
- µg/L: Micrograms per liter.
- <###: Not detected at or above the indicated reporting limit.
- : Data not available, not monitored, or not sampled
- ^: Laboratory Flag: Hydrocarbons are lower-boiling than typical Diesel Fuel
- #: Laboratory Flag: Discrete peaks in Diesel range, atypical for Diesel Fuel
- J: Laboratory Flag: TBA concentration may be biased slightly high due to conversion of a small fraction of MTBE to TBA during water sample analysis.
- (1): Method detection limit increased due to interference from gasoline range hydrocarbons
- (2): Repeat analysis by Method 8260B yielded inconsistent results. The concentrations appear to vary between bottles. The highest valid result is reported.

TABLE 4
Passive Soil Gas Sample Analytical Data
 Terradev Jefferson, LLC Property
 645 Fourth Street
 Oakland, CA

Sample ID	Sample Depth (ft bgs)	Install Date	Retrieval Date	TPH (µg)	DRPH (µg)	GRPH (µg)	B (µg)	T (µg)	E (µg)	X (µg)	MTBE (µg)	1,2-DCA (µg)	Naphth. (µg)
S-1	~2 - 3	2/7/15	2/14/15	13.33	2.90	10.86	0.04	0.03	0.02	0.17	0.25	0.13	0.20
S-2	~2 - 3	2/7/15	2/14/15	273.77	59.21	223.55	48.01	209.52	123.77	505.33	<0.02	3.97	35.44
S-3	~2 - 3	2/7/15	2/14/15	183.36	72.98	115.01	33.38	127.13	113.16	367.48	<0.02	2.35	37.35
S-4	~2 - 3	2/7/15	2/14/15	1.00	<0.50	0.66	0.02	0.02	<0.02	0.18	<0.02	2.35	<0.50
S-5	~2 - 3	2/7/15	2/14/15	220.53	107.91	117.33	20.23	90.58	24.79	369.71	<0.02	2.01	30.63
S-6	~2 - 3	2/7/15	2/14/15	169.75	54.69	119.88	15.94	29.38	31.45	337.65	<0.02	0.90	2.45
S-7	~2 - 3	2/7/15	2/14/15	1.03	0.74	<0.50	0.07	0.15	0.06	0.59	<0.02	<0.02	<0.50
S-8	~2 - 3	2/7/15	2/14/15	245.41	106.20	145.04	32.86	103.45	76.32	421.35	<0.02	2.53	36.09
S-9	~2 - 3	2/7/15	2/14/15	<0.50	<0.50	<0.50	0.36	0.36	0.03	0.16	<0.02	0.02	<0.50

Notes:

ft bgs feet below ground surface
 µg micrograms
 TPH Total petroleum hydrocarbons by SPG-WI-0292
 DRPH Diesel range petroleum hydrocarbons by SPG-WI-0292
 GRPH Gasoline range petroleum hydrocarbons by SPG-WI-0292
 BTEX benzene, toluene, ethylbenzene, and xylenes by SPG-WI-0292
 MTBE methyl tert-butyl ether by SPG-WI-0292
 1,2-DCA 1,2-dichloroethane by SPG-WI-0292
 Naphthalene Naphthalene by SPG-WI-0292
 <### Not detected at or above the indicated reporting limit.

Table 5
SUB-SLAB VAPOR SAMPLE ANALYTICAL DATA
TerraDev Jefferson LLC Property
645 4th St.
Oakland, CA

Sample I.D.	Sample Date	sample container	Consituent Concentrations									Soil Gas Concentrations			Tracer Gas			Sample Can Vacuum	
			TPHg (ug/m ³)	B (ug/m ³)	T (ug/m ³)	E (ug/m ³)	X (ug/m ³)	MTBE (ug/m ³)	Naphthalene (ug/m ³)	1,2-DCA (ug/m ³)	EDB (ug/m ³)	O ₂ (%)	CO ₂ (%)	CH ₄ (%)	In Shroud (%)	In Sample (%)	Leak Percent [^] (%)	End of Sampling ("Hg)	Arrival at Lab ("Hg)
VP-1	6/16/12	1-L	1,300	38	120	21	138	7.3	<0.09	<0.14	<0.050	15	0.096	<0.008	22.2	2.4	10.8%	-8	-6
	9/22/12	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	19	0.78	<0.008	20.0	0.19	1.0%	-5	-6
	1/25/14	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	14	4.7	<0.008	5.7	0.023	0.40%	-5	-5
	12/5/15	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	11	2.6	<0.008	8.0	<0.003	<0.04%	-5	-1
	3/12/16	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	13	2.4	<0.009	10.0	0.009	0.09%	-5	-4
VP-2	6/16/12	1-L	1,200	66	25	2.6	8.2	<6.3	<0.090	<0.14	<0.050	11	1.3	<0.009	13.8	<0.003	<0.02%	-8	-7
	9/22/12	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	14	4.0	<0.008	19.0	<0.003	<0.02%	-7	-6
	1/25/14	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	12	7.4	<0.008	6.6	<0.003	<0.05%	-5	-5
	12/5/15	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	5.2	4.2	<0.010	8.3	<0.003	<0.04%	-5	-2
	3/12/16	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	9.3	6.8	<0.010	9.6	0.009	0.09%	-5	-4
VP-3	6/16/12	1-L	960	16	19	2.9	20	<5.8	<0.08	<0.13	<0.050	16	0.029	<0.008	23.6	2.6	11%	-5	-5
	9/22/12	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	20	0.46	<0.008	15.7	0.036	0.23%	-5	-6
	1/25/14	1-L	<330	<8.0	<9.4	<11	<22	<9.0	<13	<10	<3.8	19	1.5	<0.008	6.6	0.012	0.18%	-5	-1
VP-4	9/6/15	1-L	5,600,000	<58,000	<69,000	<79,000	600,000	<66,000	<95,000	<74,000	<140,000	7.5	0.37	<0.009	6.5	0.004	0.06%	-5	-2
	12/5/15	1-L	2,000,000	<1,100	<1,300	<1,500	55,000	<1,200	<1,800	<1,400	<530	17	2.9	<0.007	8.2	<0.003	<0.04%	-5	-3
	3/12/16	1-L	10,000,000	4,100	6,500	<1,700	22,400	<1,400	<2,000	<1,600	<590	0.82	13	0.055	8.7	0.28	3.2%	-5	-4
VP-5	9/6/15	1-L	5,000,000	180,000	140,000	110,000	1,390,000	<54,000	<78,000	<60,000	<110,000	2.7	3.3	<0.007	7.0	<0.003	<0.04%	-5	-3
	12/5/15	1-L	8,200,000	170,000	180,000	150,000	1,310,000	<12,000	<18,000	<14,000	<5,300	1.9	13	0.008	8.2	<0.003	<0.04%	-5	-1
	3/12/16	1-L	780,000	9,100	6,500	3,700	208,000	<1,300	<1,900	<1,400	<550	15	1.6	<0.007	8.9	0.13	1.5%	-5	-2

Subslab Soil Gas Screening Levels Calculated as: Screening level (subslab soil gas) = Screening level (indoor air) / 0.05

ESLs Residential Indoor Air divided by 0.05	2,000	1.9	6,200	22	2,000	220	1.7	2.2	0.094
ESLs Comm/Indus Indoor Air divided by 0.05	2,000	8.4	26,000	98	8,800	940	7.2	9.4	0.40

Indoor Air Screening Levels

ESLs Residential Indoor Air	100	0.097	310	1.1	100	11	0.083	0.11	0.0047
ESLs Comm/Indus Indoor Air	100	0.42	1,300	4.9	440	47	0.36	0.47	0.020

Notes:

- TPHg Total Petroleum Hydrocarbons as gasoline by EPA Method TO-15
- BTEX, MTBE Benzene, Toluene, Ethylbenzene, and Total Xylenes, Methyl tert-Butyl Ether by EPA Method TO-15(M) GC/MS (note: Xylene number shown in table is the sum of xylene isomers reported by lab)
- Naphthalene Naphthalene by EPA Method TO-15
- 1,2-DCA, EDB 1,2-dichloroethane, 1,2-dibromoethane by EPA Method TO-15
- O₂, CO₂, CH₄, He Oxygen, Carbon Dioxide, Methane, and Helium by modified ASTM D-1946
- ug/m³ Micrograms per cubic meter
- <#.## Compound not detected at or above the reported laboratory detection limit
- ESLs Environmental Screening Levels for Indoor Air in Commercial/Industrial or Residential setting (SFBRWQCB 2016)
- Tracer Gas in Shroud Concentration range of tracer gas in shroud recorded during sample collection. Average = (Max + Min) / 2
- Tracer Gas in Sample Concentration of tracer gas in sample as detected by lab analysis.
- Tracer Gas Leak into Sample If helium was detected in the sample, the concentration measured in the sample was divided by the average concentration in the shroud (and multiplied by 100 to convert to percent).
[^] a leak of less than 5% is considered acceptable for data evaluation.
Shaded samples indicate a tracer gas leak of more than 5%.