Carryl MacLeod
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6506
cmacleod@chevron.com

RECEIVED
By Alameda County Environmental Health 3:36 pm, Nov 20, 2015

November 19, 2015

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Standard Oil Service Station 307233
2259 First Street
Livermore, California
ACEHS Case RO0002908

I accept the *Interim Remedial Action Plan*.

I agree with the scope of work presented in this document. The information included is accurate to the best of my knowledge, and appears to meet local agency and Regional Board guidelines. This document was prepared by GHD Services, Inc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

Carryl MacLeod
Project Manager

Attachment: *Interim Remedial Action Plan*

Interim Remedial Action Plan

Former Standard Oil Station 307233
2259 First Street, Livermore, California
ACEH Case RO0002908

Prepared For:

Mr. Jerry Wickham
Alameda County Environmental Health (ACEH)
1131 Harbor Parkway, Suite 250
Alameda, California 94502

Chevron Environmental Management Company

November 19, 2015

10969 Trade Center Drive, Suite 107, Rancho Cordova, California 95670

312264 | 2015.6 | 04.10 | Report No 38

Interim Remedial Action Plan

Former Standard Oil Station 307233
2259 First Street, Livermore, California
ACEH Case RO0002908

Prepared For:

Mr. Jerry Wickham
Alameda County Environmental Health (ACEH)
1131 Harbor Parkway, Suite 250
Alameda, California 94502

Brian Silva

Greg Barclay, PG 6260

Chevron Environmental Management Company

November 19, 2015

10969 Trade Center Drive, Suite 107, Rancho Cordova, California 95670

312264 | 2015.6 | 04.10 | Report No 38

Table of Contents

Figure Index

Table Index

Appendices

1. Introduction

GHD Services Inc. (GHD) is submitting this *Interim Remedial Action Plan* (IRAP) for former Standard Oil Service Station 307233 located at 2259 First Street in Livermore, California (Figure 1) on behalf of Chevron Environmental Management Company (CEMC). In correspondence dated June 4, 2015 (Attachment A), Alameda County Environmental Health (ACEH) approved CRA's *Work Plan for Lead Delineation in Soil,* and requested that an IRAP be prepared. Subsequent ACEH correspondence dated August 27, 2015 (Appendix A) approved an extension for the submittal of the IRAP. A summary of the site background, low-threat closure evaluation, updated lead risk evaluation, and the IRAP are presented below.

2. Site Background

2.1 Site Description

The site is located on the eastern corner of First Street and South Livermore Avenue in Livermore, California (Figure 1). The earliest available aerial photograph from 1959 shows a gasoline service station building located on the southern edge of the property and two dispenser islands located on the western portion of the property. A 1973 aerial photograph indicates that the station building and dispenser islands had been removed, leaving an unoccupied paved lot. The City of Livermore purchased the site in 1974. By 1978, the Property had been redeveloped as Mills Square Park (Figure 2). The park remains in the same configuration as shown on a 1978 aerial photograph. The park consists of grass and trees with a paved walkway and gazebo. Land use surrounding the park is primarily commercial.

Since acquiring the Property from Standard Oil in 1974, the City has renovated the park on several occasions requiring digging and regrading (Appendix B). During the redevelopment activities, it is likely that lead-impacted fill was imported to the Property and/or spread across the Property. Fugro West Inc., the City's consultant for the redevelopment process in 2004, concluded in a January 6, 2004 *Soil and Groundwater Investigation Report* (Appendix B) that the source of the lead impacts at the Property was "unknown to Fugro," but "likely related to fill material at the Site".

2.2 Site Geology and Hydrogeology

The site is approximately 485 feet above mean sea level and regional topography slopes gently to the north. According to the September 2005 *Groundwater Management Plan* prepared by the Zone 7 Water Agency (Zone 7), the site is located in the Mocho II Sub-Basin of the Main Livermore-Amadore Valley Groundwater Basin. Zone 7 Water Agency extracts groundwater from this basin for municipal drinking water. Sediments in this basin are described as recent alluvium consisting of sandy gravel and sandy clayey gravel from the surface to approximately 150 feet below grade (fbg). This alluvium overlies the Livermore Formation.

Sediments encountered beneath the site during subsurface investigation consist of silty sand, silty gravel, and sandy gravel from the surface to approximately 9 fbg. Silt and clay are encountered between approximately 9 and 45 fbg, and sand and gravel are predominately encountered from approximately 45 fbg to the total depth explored of 62 fbg.

A current network of 12 onsite and offsite wells monitor groundwater in two water-bearing zones that have been identified below the site; Zone A at approximately 28 to 40 fbg and Zone B at approximately 55 fbg. Zone A is believed to be a seasonal perched zone that is not horizontally continuous across the site, as it was only encountered in the southern and eastern portions of the site, and wells MW-7 and MW-8 had insufficient groundwater to sample during the most recent sampling event. Groundwater in shallow Zone A ranges from approximately 25 to 37 fbg and flows toward the southwest. Groundwater in deeper Zone B is confined, ranges from approximately 27 to 38 fbg, and flows toward the northwest.

2.3 Remedial Actions and Current Site Conditions

Environmental assessment and remediation has been ongoing since 2003, beginning with an investigation initiated by the City of Livermore Engineering Division to assess soil and groundwater conditions prior to further development to the park. To date, 61 soil borings, 3 dual nested soil vapor probes and 12 wells have been installed. In 2005, one orphaned underground storage tank (UST) was removed and in 2007, two orphaned USTs and associated product piping were removed. A chronological summary of environmental investigation and remediation conducted to date is presented in Appendix C. The locations of all known monitoring wells, soil borings, and former USTs are presented on Figures 2 and 3.

Former UST locations and associated excavations are shown on Figure 2. Residual lead concentrations that will be removed during park renovations are shown on Figure 4. The extent of residual lead concentrations in soil remaining after the City's planned excavation associated with the park renovation are shown on Figure 5. Profile views showing the extent of lead concentrations, assumed excavation depths are shown on Figures 6 through 8. The management of excavated soil is described in the sections below.

3. Updated Lead Risk Evaluation

Lead data collected to date (Table 1) was used to perform a Tier 3 lead risk evaluation (RE). Risk exposure scenarios for child park users and commercial workers were evaluated following US Environmental Protection Agency (USEPA) and Department of Toxic Substances Control (DTSC) guidelines. Results of the evaluation show that the levels of lead within the soil beneath the park will not result in a concern for either a child or commercial worker. A more detailed summary of the RE and calculation tables are presented in Appendix D.

4. Soil Management during Park Renovation

Based on information provided by the City, the current park will be undergoing extensive renovations on behalf of the City and be renamed Livermorium Park/Plaza. A description of the renovation and procedures associated with the management of excavated soil are summarized below.

4.1 Description of Surface Cap

The majority of the site will be hardscaped (concrete or pavers) with the exception of a landscaped area in the western corner of the site (Appendix E). Further details on the hardscaping have not been provided by the City to date. Based on the design plans provided by the City, it is assumed

that the surface soil in the western corner landscaping will be replaced with new organically amended soil to promote growth for the new landscaping plants/trees. It is also assumed that the landscaped areas shown in the sidewalks along First Street and Livermore Avenue will not change or be similar to the current landscaping (flagstone sidewalk with trees planted in small exposed areas covered by steel grates).

4.2 Health and Safety Plan

A site-specific health and safety plan should be prepared by the contractor performing subsurface work, including excavation and grading, that addresses the proper safety of site workers and the public. In addition to specifying proper personal protection equipment (PPE) and monitoring equipment, establishing an exclusion zone around the work area needs to be included to prevent access to disturbed areas by the public during excavation activities.

4.3 Excavation and Grading Protocols

It is our understanding that the proposed renovations will require removal of approximately 1,400 cubic yards of soil from the site to facilitate sub-grade depth (assumed to be approximately 488 amsl) for the hardscaping, proposed depths for footings (for artwork and benches), removal of existing tree roots, and planting of new landscaping. Based on design plans provided by the City, it is assumed that soil excavated from the site will be disposed of offsite and new certified clean material (soil, engineered fill, concrete) will be used to replace the excavated soil. Excavated soils should not be used as surface fill or reused at another site.

During any activities disturbing site soils, it is recommended that water be applied on ground surfaces and/or uncovered soil stockpiles as needed such that there are no visible dust emissions beyond the construction zone boundary and no exceedances of the perimeter dust monitoring trigger levels. Although it is not anticipated that odor control will be necessary, in the event it is, odor control measures should consist of adding odor control agents such as simple green, Bio-Solve and/or F-500 to the dust suppression water.

The above procedures should also be followed if future repairs to new site utilities/landscaping are needed and extend below the base of the surface cap.

4.4 Management of Excavated Materials

Based on design plans provided by the City, it is assumed that any soil excavated from the site will be disposed of at an appropriately permitted disposal facility and not reused on or offsite. Based on waste disposal profiles from previous environmental investigation at the site, it is likely that any soil excavated during site renovation activities can be disposed of as non-hazardous. However, to facilitate any future soil disposal, GHD proposes to collect 4-point composite samples across the site that would facilitate soil disposal profiling of approximately 1,400 cubic yards.

4.5 Inspection and Maintenance of the Surface Cap

It is recommended that the surface cap be inspected annually at a minimum to ensure the integrity is maintained. If maintenance is required, ACEH should be notified and the repairs made in a timely manner following the appropriate procedures outlined above.

4.6 Institutional Controls

No institutional controls beyond what is described in the sections below are recommended.

4.7 Required Notifications and Approvals

Notification and approval by ACEH are required prior to implementation of any activities that disturb the surface cap or the subsurface. ACEH can be contacted at (510) 337-9335. Reference Fuel Leak Case RO0002908.

4.8 Contingency Plan

Based on data collected during previous investigation (soil borings, wells, and UST removal) and surveys performed by private utility locators using ground penetrating radar, it is not expected that any unknown features of environmental concern will be encountered during park renovation. However, in the event that unknown features of environmental concern are encountered during park renovation activities, the following steps should be implemented:

- Immediately stop work
- Notify ACEH at (510) 337-9335, reference Fuel Leak Case RO0002908
- Notify CEMC at (800) 338-5434, reference former Standard Oil Station 307233
- Do not proceed with work until approval from ACEH and CEMC is obtained

Additional contingency plan information is also included in CRA's previously submitted *Soil and Groundwater Management Plan*, dated May 2013 and included as Appendix F.

5. Low-Threat UST Case Closure Policy Evaluation

On August 17, 2012, the State Water Resource Control Board (SWRCB) adopted the low-threat UST case closure policy via Resolution 2012-0016. The intent of the policy is to increase cleanup process efficiency at petroleum release sites. A benefit of improved efficiency is the preservation of limited resources for mitigation of releases posing the greatest threat to human and environmental health. Under the policy, sites that meet the specified general and media-specific criteria pose a low threat to human health, safety, and the environment and are appropriate for case closure pursuant to Health and Safety Code section 25296.10. The policy further states that those sites that meet the criteria for low-threat closure do not require further corrective action and shall be issued a uniform closure letter. The general and media-specific criteria are described in Appendix G.

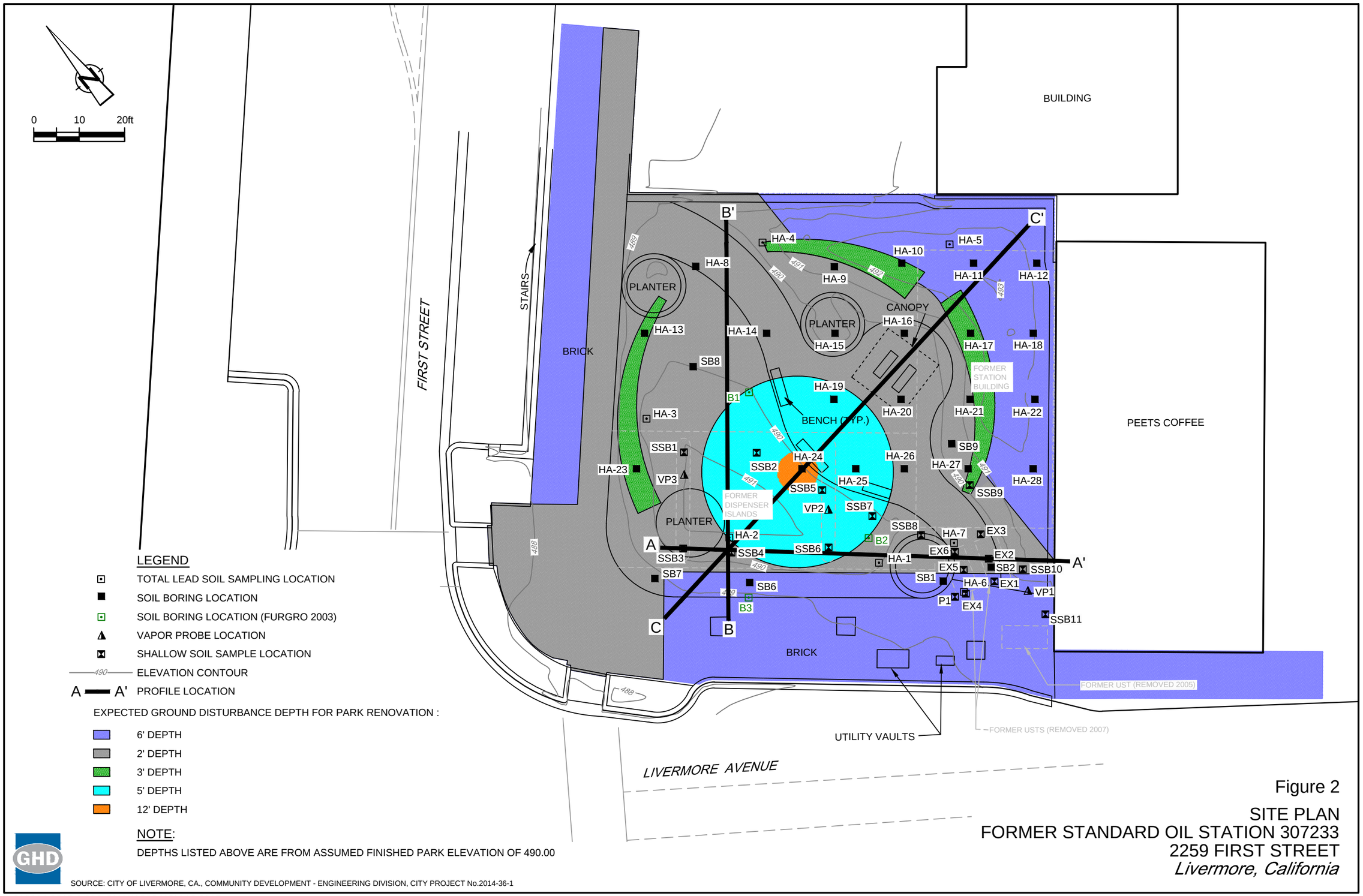
Based on the information presented in this and previous reports, site conditions meet the general and media-specific criteria of a low-threat UST release case established in the policy, and therefore pose a low threat to human health, safety, and the environment. A completed SWRCB low-threat checklist is included as Appendix E. The site satisfies the case closure requirements of Health and Safety Code section 25296.10, and case closure is consistent with Resolution 92-49 that requires cleanup goals be met within a reasonable time frame. Therefore, on behalf of CEMC, GHD

respectfully requests ACEH grant case closure. Upon ACEH approval, GHD will coordinate and schedule the destruction of all site wells per Zone 7 Water Agency guidelines.

Figures

Figure 1

VICINITY MAP
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
Livermore, California



LEGEND

- TOTAL LEAD SOIL SAMPLING LOCATION
- SOIL BORING LOCATION
- SOIL BORING LOCATION (FURGRO 2003)
- VAPOR PROBE LOCATION
- SHALLOW SOIL SAMPLE LOCATION
- 490 ELEVATION CONTOUR
- A — A' PROFILE LOCATION

EXPECTED GROUND DISTURBANCE DEPTH FOR PARK RENOVATION :

- 6' DEPTH
- 2' DEPTH
- 3' DEPTH
- 5' DEPTH
- 12' DEPTH

NOTE:

DEPTHS LISTED ABOVE ARE FROM ASSUMED FINISHED PARK ELEVATION OF 490.00

SOURCE: CITY OF LIVERMORE, CA., COMMUNITY DEVELOPMENT - ENGINEERING DIVISION, CITY PROJECT No.2014-36-1

Figure 2

SITE PLAN
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
Livermore, California

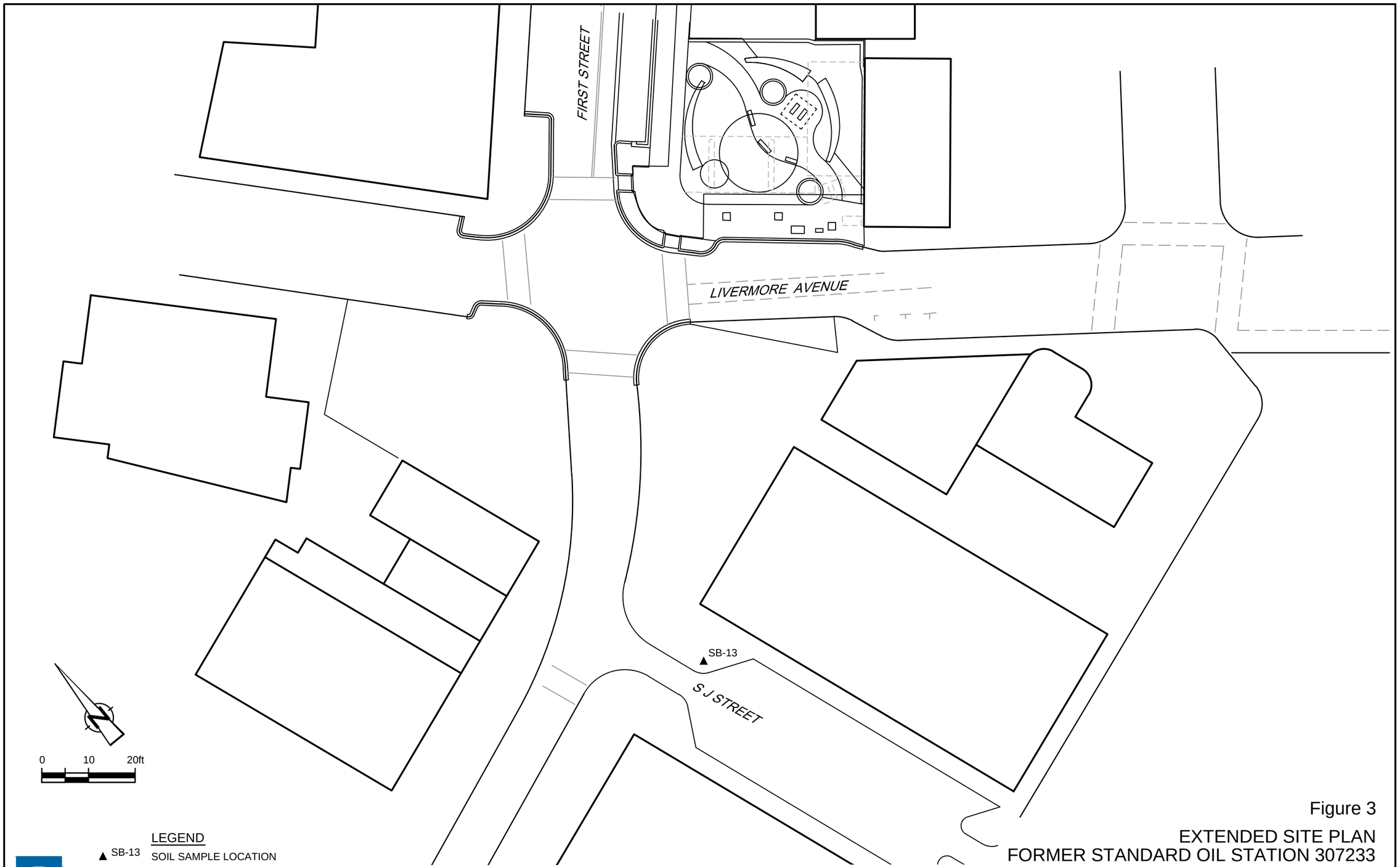


Figure 3

EXTENDED SITE PLAN
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
Livermore, California

SOURCE: CITY OF LIVERMORE, CA., COMMUNITY DEVELOPMENT - ENGINEERING DIVISION, CITY PROJECT No.2014-36-1

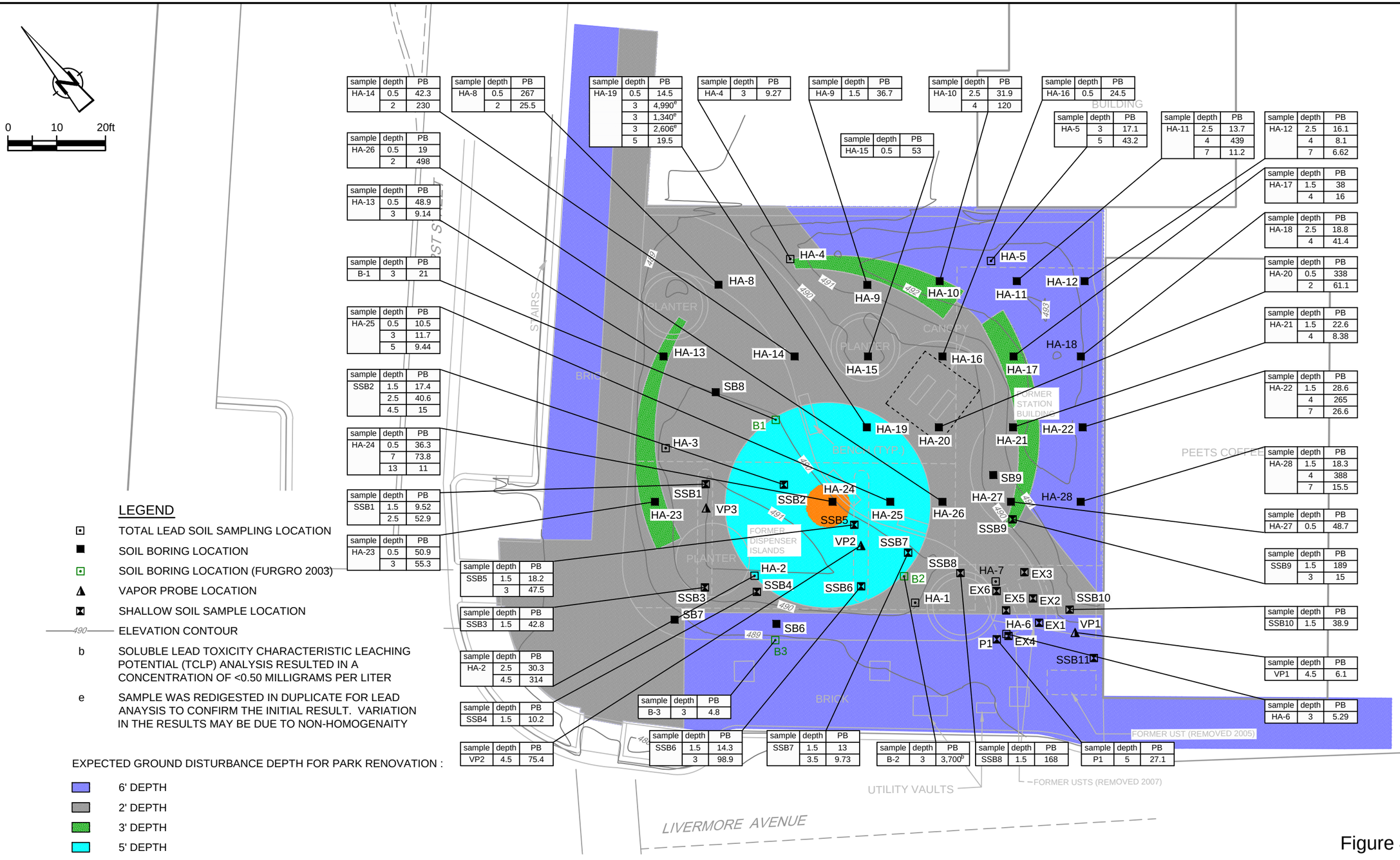
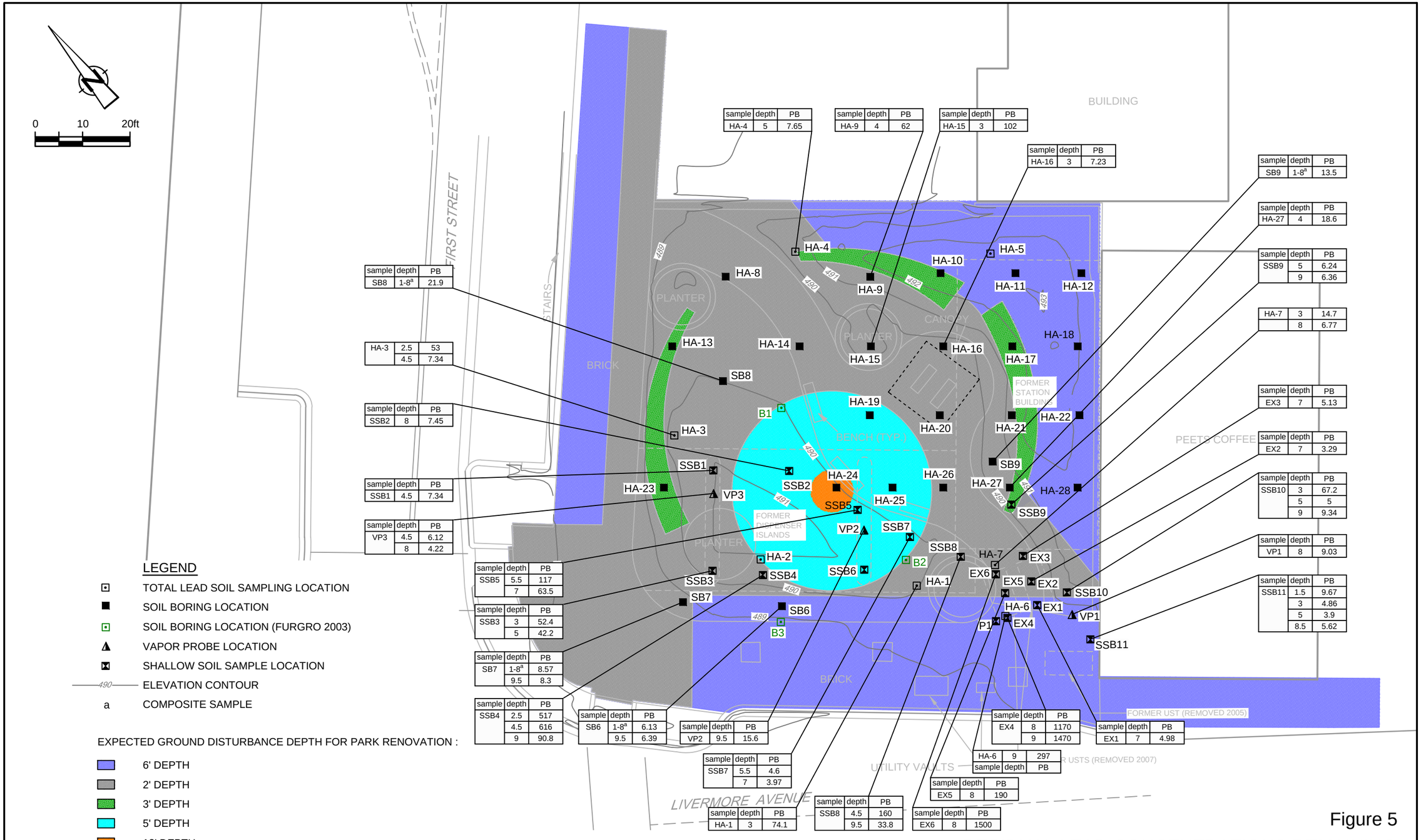


Figure 4

RESIDUAL LEAD CONCENTRATIONS TO BE REMOVED
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
Livermore, California

312264-2015.6(038)GN-WA005 NOV 18/2015



sample	depth	PB
HA-4	5	7.65

sample	depth	PB
HA-9	4	62

sample	depth	PB
HA-15	3	102

sample	depth	PB
HA-16	3	7.23

sample	depth	PB
SB9	1-8[a]	13.5

sample	depth	PB
HA-27	4	18.6

sample	depth	PB
SSB9	5	6.24
	9	6.36

sample	depth	PB
HA-7	3	14.7
	8	6.77

sample	depth	PB
EX3	7	5.13

sample	depth	PB
EX2	7	3.29

sample	depth	PB
SSB10	3	67.2
	5	5
	9	9.34

sample	depth	PB
VP1	8	9.03

sample	depth	PB
SSB11	1.5	9.67
	3	4.86
	5	3.9
	8.5	5.62

sample	depth	PB
SB8	1-8[a]	21.9

HA-3	2.5	53
	4.5	7.34

sample	depth	PB
SSB2	8	7.45

sample	depth	PB
SSB1	4.5	7.34

sample	depth	PB
VP3	4.5	6.12
	8	4.22

sample	depth	PB
SSB5	5.5	117
	7	63.5

sample	depth	PB
SSB3	3	52.4
	5	42.2

sample	depth	PB
SB7	1-8[a]	8.57
	9.5	8.3

sample	depth	PB
SSB4	2.5	517
	4.5	616
	9	90.8

sample	depth	PB
SB6	1-8[a]	6.13
	9.5	6.39

sample	depth	PB
VP2	9.5	15.6

sample	depth	PB
SSB7	5.5	4.6
	7	3.97

sample	depth	PB
HA-1	3	74.1

sample	depth	PB
SSB8	4.5	160
	9.5	33.8

sample	depth	PB
EX6	8	1500

HA-6	9	297
sample	depth	PB

sample	depth	PB
EX5	8	190

sample	depth	PB
EX4	8	1170
	9	1470

sample	depth	PB
EX1	7	4.98

LEGEND

- TOTAL LEAD SOIL SAMPLING LOCATION
- SOIL BORING LOCATION
- SOIL BORING LOCATION (FURGRO 2003)
- VAPOR PROBE LOCATION
- SHALLOW SOIL SAMPLE LOCATION
- 490 — ELEVATION CONTOUR
- a — COMPOSITE SAMPLE

EXPECTED GROUND DISTURBANCE DEPTH FOR PARK RENOVATION :

- 6' DEPTH
- 2' DEPTH
- 3' DEPTH
- 5' DEPTH
- 12' DEPTH

NOTE:

DEPTHS LISTED ABOVE ARE FROM ASSUMED FINISHED PARK ELEVATION OF 490.00

SOURCE: CITY OF LIVERMORE, CA., COMMUNITY DEVELOPMENT - ENGINEERING DIVISION, CITY PROJECT No.2014-36-1

Figure 5

RESIDUAL LEAD CONCENTRATIONS REMAINING
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
Livermore, California

312264-2015.6(038)GN-WA006 NOV 18/2015

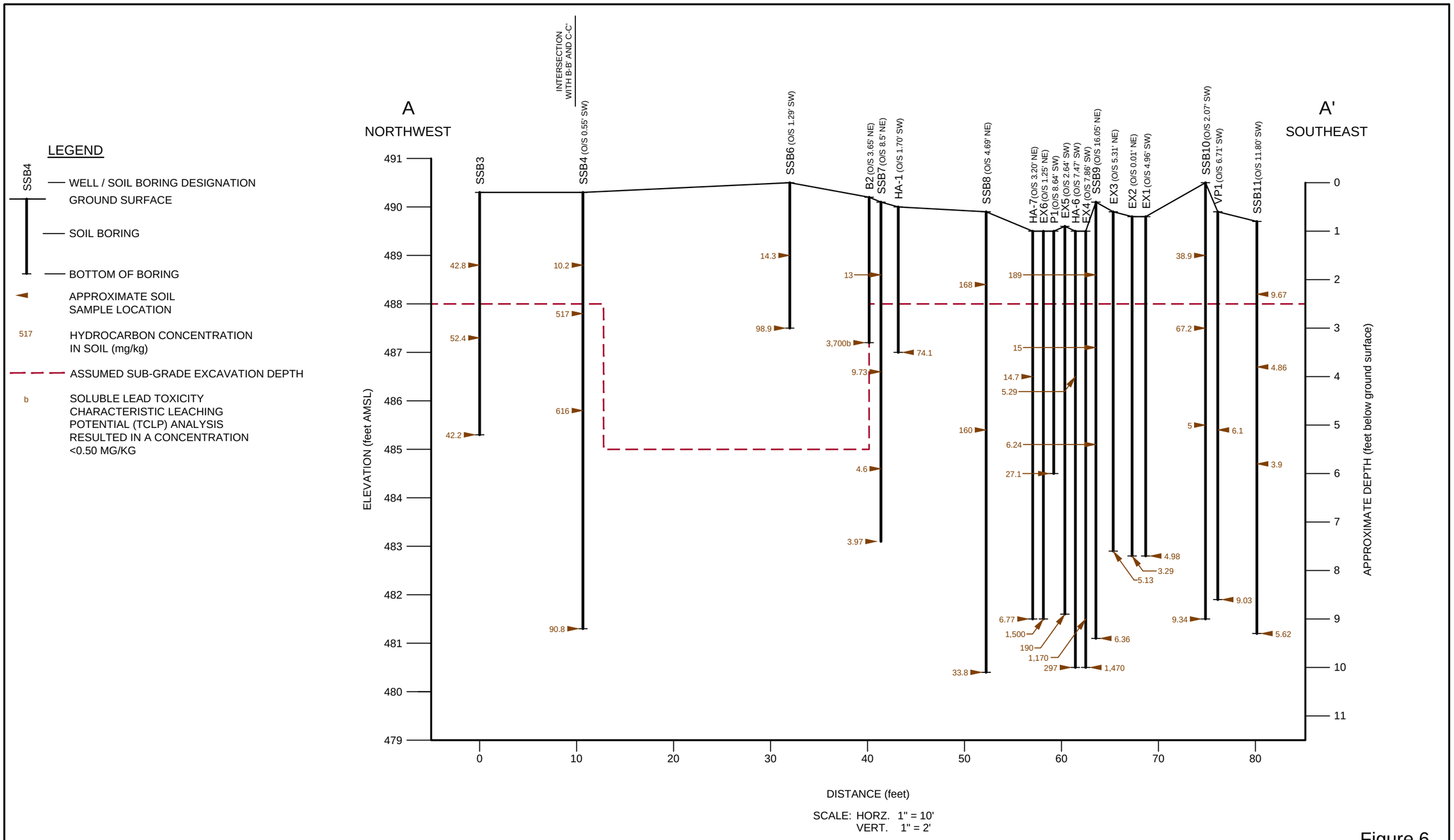


Figure 6

PROFILE A-A'
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
Livermore, California

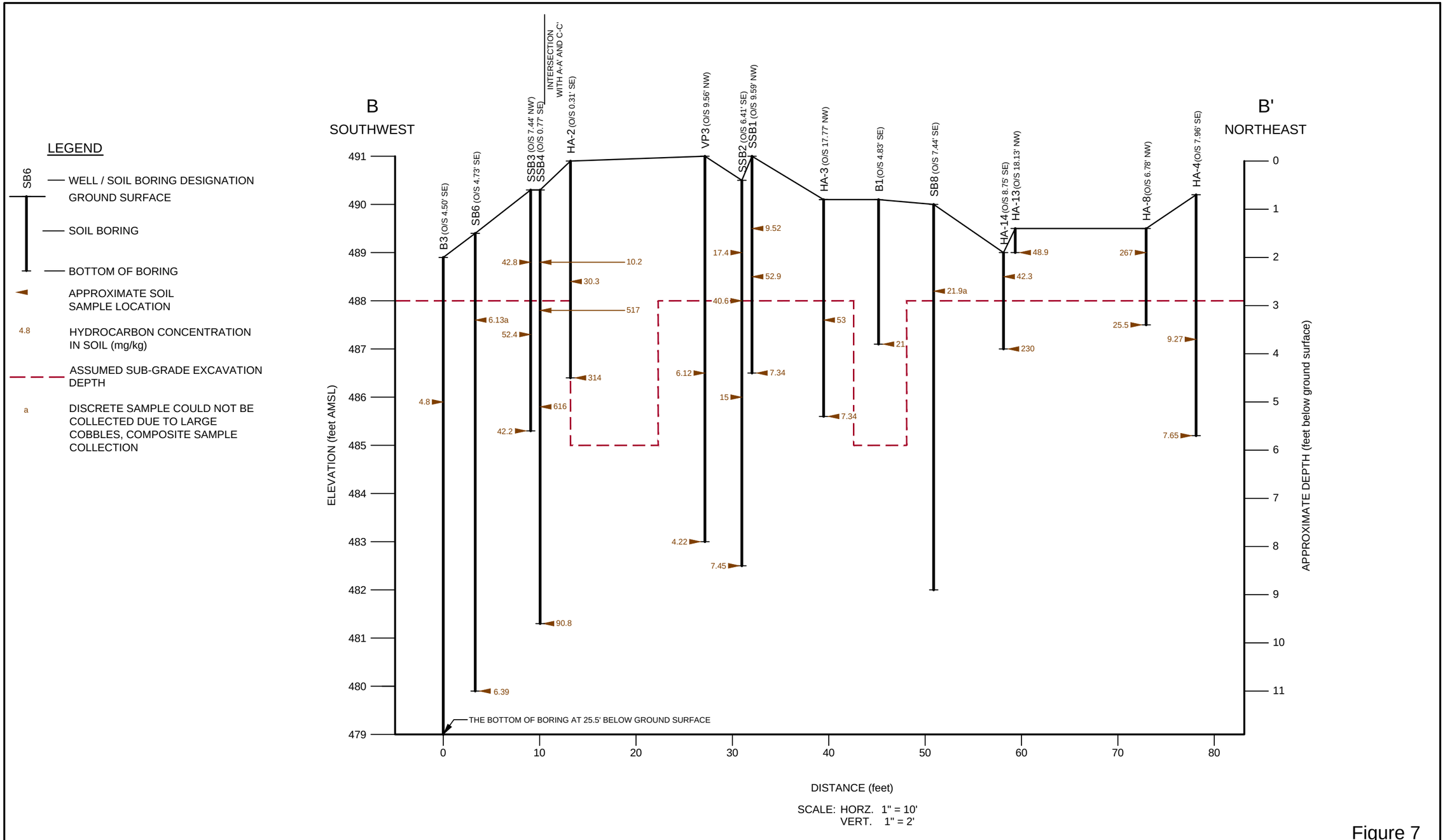


Figure 7

PROFILE B-B'
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
Livermore, California

C

WEST

C'

EAST

INTERSECTION WITH A-A' AND B-B'

SB7 (O/S 7.50' N)

SSB4 (O/S 0.98' S)

VP2 (O/S 10.17' S)

SSB5 (O/S 6.29' S)

HA-24 (O/S 0.19' N)

HA-25 (O/S 8.48' S)

HA-19 (O/S 5.41' N)

HA-20 (O/S 5.43' S)

HA-16 (O/S 3.92' N)

HA-9 (O/S 25.16' N)

HA-17 (O/S 6.78' S)

HA-5 (O/S 9.91' N)

HA-11 (O/S 3.23' N)

HA-12 (O/S 6.98' S)

ELEVATION (feet AMSL)

APPROXIMATE DEPTH (feet below ground surface)

DISTANCE (feet)

SCALE: HORZ. 1" = 10'
VERT. 1" = 2'

LEGEND

- SB7 — WELL / SOIL BORING DESIGNATION
- GROUND SURFACE
- SOIL BORING
- BOTTOM OF BORING
- APPROXIMATE SOIL SAMPLE LOCATION
- 8.57 — HYDROCARBON CONCENTRATION IN SOIL (mg/kg)
- ASSUMED SUB-GRADE EXCAVATION DEPTH
- a — SAMPLE WAS REDIGESTED IN DUPLICATE FOR LEAD ANAYSIS TO CONFIRM THE INITIAL RESULT. VARIATION IN THE RESULTS MAY BE DUE TO NON-HOMOGENAITY

Figure 8

PROFILE C-C'

FORMER STANDARD OIL STATION 307233

2259 FIRST STREET

Livermore, California

GHD

312264-2015.6(038)GN-WA004 NOV 18/2015

Table

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
2003 Fugro Subsurface Investigation												
B-1	09/17/2003	3.0	--	--	--	--	--	--	--	--	--	21
B-1	09/17/2003	25.5	<50	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	--	--
B-2	09/17/2003	3.0	--	--	--	--	--	--	--	--	--	**3,700******
B-2	09/17/2003	15.5	--	--	<1.0	<0.005	<0.005	<0.005	<0.005	--	--	--
B-2	09/17/2003	30.0	<50	9.6	3.5	<0.005	<0.005	<0.005	<0.005	<0.005	--	--
B-3	09/17/2003	3.0	--	--	--	--	--	--	--	--	--	4.8
B-3	09/17/2003	25.5	<50	<1.0	<1.0	<0.005	<0.005	<0.005	<0.005	<0.005	--	--
2005 Consolidated Engineering Tank Pull												
Sample (1) LFI	09/20/2005	3.0	<2,500	**4,100**	--	<0.017	<0.017	<0.017	<0.017	<0.017	ND	--
Sample (2)	09/20/2005	3.0	<250	**1,300**	--	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ND	--
Sample (3)	09/20/2005	3.0	<200	**670**	--	<0.022	<0.022	<0.022	<0.022	<0.022	ND	--
Sample (4)	09/20/2005	3.0	<50	1.0	<1.000	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ND	--
Sample (5)	09/20/2005	3.0	54	**140**	<1.000	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ND	--
Sample (6)	09/20/2005	3.0	<50	2.1	3	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	ND	--
October 2006 Subsurface Investigation												
SB-1	10/26/2006	10.0	<10	<10	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-1	10/26/2006	15.0	**350**	**140**	15	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-1	10/26/2006	22.0	**1,400**	**780**	**2,800**	<0.062	2.1	**7.5**	<0.12	<0.062	ND	--
SB-1	10/26/2006	26.0	**390**	**590**	**1,100**	**0.62**	0.19	**5.5**	**19**	<0.062	ND	--
SB-1	10/26/2006	32.0	**94**	**120**	**180**	**2.0**	**17**	**13**	**65**	<0.063	ND	--
SB-1	10/26/2006	35.5	67	**99**	**1,200**	**1.0**	**5.5**	2.7	**16**	<0.062	ND	--
SB-1	10/26/2006	39.5	<10	20	**1,000**	**0.90**	0.93	2.5	**11**	<0.063	ND	--
SB-3	10/23/2006	10.0	<10	<10	<1.0	<0.0005	0.001	<0.001	0.002	<0.0005	ND	--
SB-3	10/23/2006	15.0	<10	<10	<1.0	<0.0005	<0.001	<0.001	0.002	<0.0005	ND	--

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
SB-3	10/23/2006	21.0	<20	82	**1,800**	<0.062	<0.12	**4.8**	**15**	<0.062	ND	--
SB-3	10/23/2006	25.0	88	**3,000**	**8,700**	**14**	**410**	**120**	**770**	<0.31	ND	--
SB-3	10/23/2006	30.0	<20	**230**	**5,400**	**3.2**	**68**	**40**	**250**	<0.062	ND	--
SB-3	10/23/2006	35.0	<10	17	**630**	**0.080**	<0.12	0.56	1.1	<0.062	ND	--
SB-3	10/23/2006	39.5	<20	62	**130**	**0.23**	1.5	0.81	**5.5**	<0.063	ND	--
SB-4	09/12/2006	5.0	<18	33	1.3	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-4	09/12/2006	10.0	<20	28	2.8	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-4	09/12/2006	15.0	<20	<12	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-4	09/12/2006	20.0	<20	<10	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-4	09/12/2006	25.0	<20	24	**310**	<0.003	<0.005	0.008	<0.005	<0.003	ND	--
SB-4	09/12/2006	27.5	<20	**260**	**1,600**	**0.10**	0.14	**4.5**	**19**	<0.062	ND	--
SB-4	09/12/2006	30.0	<20	<12	22	0.003	<0.005	0.014	0.007	<0.002	ND	--
SB-4	09/12/2006	35.0	<20	45	**320**	<0.063	<0.13	<0.13	<0.13	<0.063	ND	--
SB-4	09/12/2006	39.5	<16	<10	1.2	**0.15**	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-5	10/24/2006	10.0	<10	<10	<1.0	<0.0005	0.001	<0.001	0.002	<0.0005	ND	--
SB-5	10/26/2006	15.0	<10	<10	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB-5	10/26/2006	19.5	**560**	**700**	27	<0.0005	<0.001	<0.001	0.001	<0.0005	ND	--
SB-5	10/26/2006	26.0	**450**	**620**	**1,100**	**0.78**	<0.13	**8.5**	**12**	<0.063	ND	--
SB-5	10/26/2006	30.0	**140**	**320**	**950**	<0.062	<0.12	1.1	2.0	<0.062	ND	--
SB-5	10/26/2006	34.0	**290**	**630**	**3,100**	**17**	**67**	**38**	**130**	<0.13	ND	--
SB-5	10/26/2006	39.5	<10	80	**1,400**	**5.4**	2.6	**13**	**73**	<0.062	ND	--
2007 Tank Pull												
EX1	06/20/2007	7.0	<580	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	4.98
EX2	06/20/2007	7.0	<580	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	3.29
EX3	06/20/2007	7.0	<580	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	5.13
EX4	06/20/2007	8.0	**11,000**	**2,800**	<1.0	<0.0005	0.001	<0.001	<0.001	<0.0005	ND	**1,170**

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
EX4	06/20/2007	9.0	**3,100**	**1,400**	<100	<0.0005	<0.001	<0.001	0.004	<0.0005	ND	**1,470**
EX5	06/20/2007	8.0	<580	**100**	<10	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	190
EX6	06/20/2007	8.0	**3,000**	**1,300**	<400	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	**1,500**
P1	06/20/2007	5.0	<580	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	27.1
2008 Subsurface Investigations												
CPT1	02/05/2008	21.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
CPT1	02/05/2008	36.0	**380**	**100**	1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
CPT2	02/04/2008	22.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
CPT2	02/04/2008	30.0	<10	27	4.4	<0.026	<0.052	1.1	0.18	<0.026	ND	--
CPT2	02/04/2008	35.0	<12	<4.0	1.3	0.0009	<0.001	<0.001	0.002	<0.0005	ND	--
CPT3	11/04/2008	18.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
CPT3	11/04/2008	35.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
CPT3	11/04/2008	55.5	<10	7.1	52	<0.024	<0.047	<0.047	<0.047	<0.024	ND	--
CPT4	11/05/2008	50.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
CPT5	11/03/2008	51.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB6	01/28/2008	1-8***	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	6.13
SB6	01/28/2008	9.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	6.39
SB6	01/28/2008	19.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	5.79
SB6	01/28/2008	24.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	10.9
SB7	01/28/2008	1-8***	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	8.57
SB7	01/30/2008	9.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	8.30
SB7	01/30/2008	19.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	4.70
SB7	01/30/2008	29.5	<10	<4.0	3.7	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	10.5
SB7	01/30/2008	34.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	11.6

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
SB8	01/28/2008	1-8***	53	18	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	<0.0005	ND	21.9
SB8	01/31/2008	19.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	10.3
SB8	01/31/2008	29.5	<10	<4.0	1.2	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	8.29
SB8	01/31/2008	34.5	<10	67	**530**	<0.027	<0.054	0.10	<0.054	<0.027	ND	7.86
SB8	01/31/2008	39.5	<10	<4.0	<1.0	0.007	0.002	0.015	0.007	**0.039**	0.034[a]	8.93
SB9	01/28/2008	1-8***	32	13	1.3	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	13.5
SB9	01/29/2008	15.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	6.36
SB9	01/29/2008	27.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	7.92
SB9	01/29/2008	34.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	12.3
SB9	01/29/2008	46.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	9.34
SB9	01/29/2008	54.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	5.77
SB10	10/23/2008	5.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB10	11/04/2008	16.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB10	11/04/2008	26.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB10	11/04/2008	36.0	<10	<4.0	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	<0.0005	ND	--
SB10	11/04/2008	46.0	<10	4.2	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB10	11/04/2008	56.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB10	11/04/2008	62.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB11	10/24/2008	5.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB11	11/03/2008	11.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB11	11/03/2008	16.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB11	11/03/2008	26.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB11	11/03/2008	36.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB11	11/03/2008	45.5	<10	<4.0	59	<0.0005	<0.0009	<0.0009	<0.0009	<0.0005	ND	--
SB11	11/03/2008	50.5	<10	25	59	<0.023	<0.045	<0.045	<0.045	<0.023	ND	--
SB11	11/03/2008	56.0	<10	45	**98**	<0.023	<0.047	<0.047	<0.047	<0.023	ND	--

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
SB11	11/03/2008	61.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB12	10/24/2008	5.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB12	11/03/2008	15.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB12	11/03/2008	25.5	<10	<4.0	120	<0.023	<0.046	<0.046	<0.046	<0.023	ND	--
SB12	11/03/2008	30.0	<10	34	58	<0.024	<0.047	<0.047	<0.047	<0.024	ND	--
SB12	11/03/2008	35.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SB12	11/03/2008	45.5	<10	<4.0	1.3	0.0007	<0.001	<0.001	<0.001	<0.0005	ND	--
SB12	11/03/2008	50.5	<10	65	**1,200**	<0.023	<0.046	<0.046	<0.046	<0.023	ND	--
SB12	11/03/2008	55.5	<10	55	**1,300**	**1.1**	0.15	2.0	**3.7**	<0.024	ND	--
SB12	11/03/2008	60.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	--
SSB1	02/01/2008	1.5	--	--	--	--	--	--	--	--	--	9.52
SSB1	02/01/2008	2.5	--	--	--	--	--	--	--	--	--	52.9
SSB1	02/01/2008	4.5	--	--	--	--	--	--	--	--	--	7.34
SSB2	01/28/2008	1.5	--	--	--	--	--	--	--	--	--	17.4
SSB2	01/30/2008	2.5	--	11	1.2	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	40.6
SSB2	01/30/2008	4.5	--	4.4	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	15.0
SSB2	01/30/2008	8.0	--	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	7.45
SSB3	01/30/2008	1.5	--	--	--	--	--	--	--	--	--	42.8
SSB3	02/06/2008	3.0	--	--	--	--	--	--	--	--	--	52.4
SSB3	02/06/2008	5.0	--	--	--	--	--	--	--	--	--	42.2
SSB4	02/01/2008	1.5	--	--	--	--	--	--	--	--	--	10.2
SSB4	02/01/2008	2.5	--	--	--	--	--	--	--	--	--	**517**
SSB4	02/01/2008	4.5	--	--	--	--	--	--	--	--	--	**616**
SSB4	02/01/2008	9.0	--	--	--	--	--	--	--	--	--	90.8
SSB5	02/06/2008	1.5	--	--	--	--	--	--	--	--	--	18.2

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
SSB5	02/06/2008	3.0	--	--	--	--	--	--	--	--	--	47.5
SSB5	02/06/2008	5.5	--	--	--	--	--	--	--	--	--	117
SSB5	02/06/2008	7.0	--	--	--	--	--	--	--	--	--	63.5
SSB6	02/06/2008	1.5	--	--	--	--	--	--	--	--	--	14.3
SSB6	02/06/2008	3.0	--	--	--	--	--	--	--	--	--	98.9
SSB7	02/06/2008	1.5	--	--	--	--	--	--	--	--	--	13.0
SSB7	02/06/2008	3.5	--	--	--	--	--	--	--	--	--	9.73
SSB7	02/06/2008	5.5	--	--	--	--	--	--	--	--	--	4.60
SSB7	02/06/2008	7.0	--	--	--	--	--	--	--	--	--	3.97
SSB8	02/01/2008	1.5	--	--	--	--	--	--	--	--	--	168
SSB8	02/01/2008	4.5	--	--	--	--	--	--	--	--	--	160
SSB8	02/01/2008	9.5	--	--	--	--	--	--	--	--	--	33.8
SSB9	02/06/2008	1.5	--	--	--	--	--	--	--	--	--	189
SSB9	02/06/2008	3.0	--	--	--	--	--	--	--	--	--	15.0
SSB9	02/06/2008	5.0	--	--	--	--	--	--	--	--	--	6.24
SSB9	02/06/2008	9.0	--	--	--	--	--	--	--	--	--	6.36
SSB10	01/31/2008	1.5	--	--	--	--	--	--	--	--	--	38.9
SSB10	02/06/2008	3.0	--	--	--	--	--	--	--	--	--	67.2
SSB10	02/06/2008	5.0	--	--	--	--	--	--	--	--	--	5.00
SSB10	02/06/2008	9.0	--	--	--	--	--	--	--	--	--	9.34
SSB11	02/06/2008	1.5	--	--	--	--	--	--	--	--	--	9.67
SSB11	02/06/2008	3.0	--	--	--	--	--	--	--	--	--	4.86
SSB11	02/06/2008	5.0	--	--	--	--	--	--	--	--	--	3.90
SSB11	02/06/2008	8.5	--	--	--	--	--	--	--	--	--	5.62

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
VP1	02/01/2008	4.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	6.10
VP1	02/01/2008	8.0	<10	<4.0	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	<0.0005	ND	9.03
VP2	02/01/2008	4.5	54	25	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	<0.0005	ND	75.4
VP2	02/01/2008	9.5	<10	<4.0	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	<0.0005	ND	15.6
VP3	02/01/2008	4.5	<10	<4.0	1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	6.12
VP3	02/01/2008	8.0	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	<0.0005	ND	4.22
2010 CRA Well Installation												
MW-1	03/29/2010	4.0	<10	<4.0	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-1	04/07/2010	9.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	14.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	19.5	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	24.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	29.5	<10	31	**310**	<0.025	<0.049	<0.049	<0.049	--	--	--
MW-1	04/07/2010	34.5	<10	<4.0	<1.0	0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	39.5	<10	<4.0	6.8	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	44.5	<10	<4.0	5.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	49.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	54.5	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-1	04/07/2010	59.5	<10	<4.0	<1	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-2	04/05/2010	9.5	<10	<4.0	<1	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-2	04/05/2010	14.5	<10	<4.0	<1	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-2	04/05/2010	19.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-2	04/05/2010	24.5	<10	<4.0	<0.9	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-2	04/05/2010	29.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-2	04/05/2010	34.5	<10	<4.0	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-2	04/05/2010	39.5	<10	<4.0	<1	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
MW-2	04/05/2010	44.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-2	04/05/2010	49.5	<10	<4.0	<1.1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-2	04/05/2010	54.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-2	04/05/2010	59.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	03/30/2010	5.0	<10	8.8	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	9.5	<10	<4.0	<0.9	<0.0005	0.002	<0.001	<0.001	--	--	--
MW-3	04/06/2010	14.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	19.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	24.5	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	29.5	<10	<4.0	<1.1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	34.5	<10	<4.0	<1.0	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-3	04/06/2010	39.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	44.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	49.5	<10	<4.0	<1.1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	54.5	<10	<4.0	10	0.004	<0.001	<0.001	<0.001	--	--	--
MW-3	04/06/2010	59.5	<10	<4.0	<1.1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	03/30/2010	5.0	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	10.5	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	15.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	20.5	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	25.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	30.5	<10	82	42	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	35.5	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	40.5	<10	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	45.5	<10	<4.0	80	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	50.5	<10	<4.0	31	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-4	04/12/2010	55.5	<10	4.7	**110**	0.003	0.001	0.019	0.007	--	--	--

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
MW-4	04/12/2010	60.5	<10	<4.0	<0.9	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-5	03/31/2010	5.0	**130**	42	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-5	04/08/2010	9.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-5	04/08/2010	14.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-5	04/08/2010	19.5	<10	<4.0	<1	0.001	<0.0009	<0.0009	<0.0009	--	--	--
MW-5	04/08/2010	24.5	<10	5.9	**150**	<0.026	<0.053	<0.053	<0.053	--	--	--
MW-5	04/08/2010	29.5	<10	8.1	18	0.003	<0.001	0.038	0.022	--	--	--
MW-5	04/08/2010	34.5	<10	29	51	<0.023	<0.046	<0.046	<0.046	--	--	--
MW-5	04/08/2010	39.5	<10	<4.0	2.1	0.027	0.002	0.004	<0.001	--	--	--
MW-5	04/08/2010	44.5	<10	<4.0	<1.0	0.003	<0.001	<0.001	<0.001	--	--	--
MW-5	04/08/2010	49.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-5	04/08/2010	54.5	<10	<4.0	<1	0.0006	<0.001	<0.001	<0.001	--	--	--
MW-5	04/08/2010	59.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/01/2010	5.0	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	10.0	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	15.0	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	19.5	<10	<4.0	<0.9	<0.0005	<0.0009	<0.0009	<0.0009	--	--	--
MW-6	04/09/2010	25.0	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	30.0	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	35.0	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	40.0	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	45.0	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	50.0	<10	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-6	04/09/2010	55.0	<10	<4.0	44	0.020	0.003	0.006	0.002	--	--	--
MW-6	04/09/2010	59.5	<10	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--

2012 CRA Well Installation

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
MW-10	2/14/2012	5	--	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-10	2/15/2012	10	--	<4.0	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-10	2/15/2012	15	--	<4.0	<1.1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-10	2/15/2012	20	--	<4.0	<1.1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-10	2/15/2012	25	--	6.2	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-10	2/15/2012	30	--	29	250	<0.023	<0.046	<0.046	<0.046	--	--	--
MW-10	2/15/2012	35	--	4.3	<1	0.0007	<0.001	<0.001	<0.001	--	--	--
MW-10	2/15/2012	39.5	--	4.3	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-11	2/14/2012	5	--	5.5	<1.1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-11	2/16/2012	10	--	<4.0	<1.0	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-11	2/16/2012	15	--	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-11	2/16/2012	20	--	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-11	2/16/2012	30	--	4.1	<0.9	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-11	2/16/2012	35	--	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-11	2/16/2012	39.5	--	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-12	2/16/2012	5	--	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-12	2/17/2012	10	--	4.4	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-12	2/17/2012	15	--	<4.0	<1	<0.0005	<0.001	<0.001	<0.001	--	--	--
MW-12	2/17/2012	20	--	<4.0	<1	0.0006	<0.001	<0.001	<0.001	--	--	--
MW-12	2/17/2012	25	--	72	500	0.098	<0.050	1.5	0.91	--	--	--
MW-12	2/17/2012	30	--	65	24	0.002	<0.001	<0.001	<0.001	--	--	--
MW-12	2/17/2012	35	--	300	1,400	0.15	<0.20	4.8	11	--	--	--
MW-12	2/17/2012	39.5	--	<4.0	1.5	0.062	0.001	<0.001	0.002	--	--	--
MW-12	2/17/2012	42	--	<4.0	<1.0	0.023	<0.001	<0.001	<0.001	--	--	--
MW-12	2/17/2012	44.5	--	<4.0	<1	0.021	<0.001	<0.01	<0.001	--	--	--

2014/2015 Lead Speciation Investigation

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
HA-1	10/07/2014	3	--	--	--	--	--	--	--	--	--	74.1
HA-2	10/07/2014	2.5	--	--	--	--	--	--	--	--	--	30.3
HA-2	10/07/2014	4.5	--	--	--	--	--	--	--	--	--	**314**
HA-3	10/07/2014	2.5	--	--	--	--	--	--	--	--	--	53.0
HA-3	10/07/2014	4.5	--	--	--	--	--	--	--	--	--	7.34
HA-4	10/08/2014	3	--	--	--	--	--	--	--	--	--	9.27
HA-4	10/08/2014	5	--	--	--	--	--	--	--	--	--	7.65
HA-5	10/08/2014	3	--	--	--	--	--	--	--	--	--	17.1
HA-5	10/08/2014	5	--	--	--	--	--	--	--	--	--	43.2
HA-6	01/20/2015	3	--	--	--	--	--	--	--	--	--	5.29
HA-6	01/20/2015	9	--	--	--	--	--	--	--	--	--	**297**
HA-7	01/20/2015	3	--	--	--	--	--	--	--	--	--	14.7
HA-7	01/20/2015	8	--	--	--	--	--	--	--	--	--	6.77
2015 Lead Delineation and Offsite Boring												
HA-8	09/14/2015	0.5	--	--	--	--	--	--	--	--	--	267
HA-8	09/14/2015	2.0	--	--	--	--	--	--	--	--	--	25.5
HA-9	09/16/2015	1.5	--	--	--	--	--	--	--	--	--	36.7
HA-9	09/16/2015	4.0	--	--	--	--	--	--	--	--	--	62.0
HA-10	09/16/2015	2.5	--	--	--	--	--	--	--	--	--	31.9
HA-10	09/16/2015	4.0	--	--	--	--	--	--	--	--	--	120
HA-11	09/16/2015	2.5	--	--	--	--	--	--	--	--	--	13.7
HA-11	09/16/2015	4.0	--	--	--	--	--	--	--	--	--	**439**

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
HA-11	09/16/2015	7.0	--	--	--	--	--	--	--	--	--	11.2
HA-12	09/16/2015	2.5	--	--	--	--	--	--	--	--	--	16.1
HA-12	09/16/2015	4.0	--	--	--	--	--	--	--	--	--	8.10
HA-12	09/16/2015	7.0	--	--	--	--	--	--	--	--	--	6.62
HA-13	09/14/2015	0.5	--	--	--	--	--	--	--	--	--	48.9
HA-13	09/14/2015	3.0	--	--	--	--	--	--	--	--	--	9.14
HA-14	09/14/2015	0.5	--	--	--	--	--	--	--	--	--	42.3
HA-14	09/14/2015	2.0	--	--	--	--	--	--	--	--	--	230
HA-15	09/14/2015	0.5	--	--	--	--	--	--	--	--	--	53.0
HA-15	09/14/2015	3.0	--	--	--	--	--	--	--	--	--	102
HA-16	09/15/2015	0.5	--	--	--	--	--	--	--	--	--	24.5
HA-16	09/15/2015	3.0	--	--	--	--	--	--	--	--	--	7.23
HA-17	09/15/2015	1.5	--	--	--	--	--	--	--	--	--	38.0
HA-17	09/15/2015	4.0	--	--	--	--	--	--	--	--	--	16.0
HA-18	09/16/2015	2.5	--	--	--	--	--	--	--	--	--	18.8
HA-18	09/16/2015	4.0	--	--	--	--	--	--	--	--	--	41.4
HA-19	09/15/2015	0.5	--	--	--	--	--	--	--	--	--	14.5
HA-19	09/15/2015	3.0	--	--	--	--	--	--	--	--	--	**4,990[e]**
HA-19	09/15/2015	3.0	--	--	--	--	--	--	--	--	--	**1,340[e]**
HA-19	09/15/2015	3.0	--	--	--	--	--	--	--	--	--	**2,606[e]**
HA-19	09/15/2015	5.0	--	--	--	--	--	--	--	--	--	19.5
HA-20	09/15/2015	0.5	--	--	--	--	--	--	--	--	--	**338**

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
HA-20	09/15/2015	2.0	--	--	--	--	--	--	--	--	--	61.1
HA-21	09/15/2015	1.5	--	--	--	--	--	--	--	--	--	22.6
HA-21	09/15/2015	4.0	--	--	--	--	--	--	--	--	--	8.38
HA-22	09/17/2015	1.5	--	--	--	--	--	--	--	--	--	28.6
HA-22	09/17/2015	4.0	--	--	--	--	--	--	--	--	--	**265**
HA-22	09/17/2015	7.0	--	--	--	--	--	--	--	--	--	26.6
HA-23	09/14/2015	0.5	--	--	--	--	--	--	--	--	--	50.9
HA-23	09/14/2015	3.0	--	--	--	--	--	--	--	--	--	55.3
HA-24	09/17/2015	0.5	--	--	--	--	--	--	--	--	--	36.3
HA-24	09/17/2015	7.0	--	--	--	--	--	--	--	--	--	73.8
HA-24	09/17/2015	13.0	--	--	--	--	--	--	--	--	--	11.0
HA-25	09/15/2015	0.5	--	--	--	--	--	--	--	--	--	10.5
HA-25	09/15/2015	3.0	--	--	--	--	--	--	--	--	--	11.7
HA-25	09/15/2015	5.0	--	--	--	--	--	--	--	--	--	9.44
HA-26	09/15/2015	0.5	--	--	--	--	--	--	--	--	--	19.0
HA-26	09/15/2015	2.0	--	--	--	--	--	--	--	--	--	**498**
HA-27	09/15/2015	0.5	--	--	--	--	--	--	--	--	--	48.7
HA-27	09/15/2015	4.0	--	--	--	--	--	--	--	--	--	18.6
HA-28	09/17/2015	1.5	--	--	--	--	--	--	--	--	--	18.3
HA-28	09/17/2015	4.0	--	--	--	--	--	--	--	--	--	**388**
HA-28	09/17/2015	7.0	--	--	--	--	--	--	--	--	--	15.5
SB-13	09/17/2015	35.0	--	--	<0.042	<0.0005	<0.001	<0.001	<0.001	--	--	--

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg)									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE
			0									

Notes and Abbreviations:

Total petroleum hydrocarbons as motor oil (TPHmo) analyzed by EPA Method 8015B modified unless otherwise noted.
Total petroleum hydrocarbons as diesel (TPHd) analyzed by EPA Method 8015B with silica gel cleanup unless otherwise noted.
Total petroleum hydrocarbons as gasoline (TPHg) analyzed by EPA Method 8015B modified unless otherwise noted.
Benzene, toluene, ethylbenzene, and total xylenes (BTEX); methyl tertiary-butyl ether (MTBE); t-butyl alcohol (TBA); di-isopropyl ether (DIPE); ethyl tertiary-butyl ether (ETBE); t-amyl methyl ether (TAME); 1,2-dichloroethane (1,2-DCA); 1,2-dibromoethane (EDB) analyzed by EPA method 8260B unless otherwise noted.
OXYs = TBA, DIPE, ETBE, TAME, 1,2,-DCA, and EDB
fbg = feet below grade.
<x = Not detected at reporting limit x.
ND = not detected at various laboratory method detection limits.
ESLs = Environmental Screening Levels for commerical land use where groundwater is a current or potential drinking water source from *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater* presented by the California Regional Water Quality Control Board - San
OEHAA = Office of Environmental Health Hazard Assessment's *Revised California Human Health Screening Level for Lead* dated May 18, 2009
NE = Not established
-- = Not applicable/not analyzed.
a = Potential leaching of chemicals from vadose zone soils and subsequent impact on groundwater
b = Worker who regularly performs grounds-keeping activities. Exposure to surface ans shallow subsurface soils (i.e. at depths of 0-2 fbg) is expected to
c = Worker on a single onsite construction project with exposures to surface and subsurface soils (i.e. at depths of 0-10 fbg) during excavation, maintenance and building construction.
d = TBA, no other oxygenates detected
e = Sample was redigested in duplicate for lead analysis to confirm the initial result. Variation in the results may be due to non-homogenaity
*** = Discrete sample could not be collected due to large cobbles, composite sample collected.

TABLE 1

CUMULATIVE SOIL ANALYTICAL DATA
FORMER STANDARD OIL SERVICE STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
Table G	Level (Drinking Water Sourse) [a]		83	83	83	0.044	2.9	3.3	2.3	0.023	Varies	NE
Table K-2	Commercial/Industrial Worker [b]		3,700	450	450	0.27	210	5	100	65	Varies	320
Table K-3	Construction/Trench Worker [c]		12,000	4,200	4,200	12	650	210	420	2,800	Varies	320
OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
OEHAA	Commercial Land Use		-	-	-	-	-	-	-	-	-	260
Low-Threat Policy - Direct Contact and Outdoor Air Exposure												
0 to 5 fbg, Residential			NE	NE	NE	1.9	NE	21	NE	NE	NE	NE
5 to 10 fbg, Residential, Outdoor Air			NE	NE	NE	2.8	NE	32	NE	NE	NE	NE
0 to 5 fbg, C/I			NE	NE	NE	8.2	NE	89	NE	NE	NE	NE
5 to 10 fbg, C/I, Outdoor Air			NE	NE	NE	12	NE	134	NE	NE	NE	NE
0 to 10 fbg, Utility Worker			NE	NE	NE	14	NE	314	NE	NE	NE	NE

**** = Soluble Lead Toxicity Characteristic Leaching Potential (TCLP) analysis resulted in a concentration <0.50 milligrams per liter.

Low-Threat Policy = State Water Resources Control Board (SWRCB) Low-Threat Underground Storage Tank Closure Policy, adopted on August 17, 2012.

Appendix A
Regulatory Correspondence

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

June 4, 2015

Ms. Carryl MacLeod (*Sent via E-mail to: cmacleod@chevron.com*)
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

Mr. Eric Uranga (*Sent via E-mail to: ejuranga@cityoflivermore.net*)
City of Livermore Economic Development
1052 S. Livermore Ave.
Livermore, CA 94550

Subject: Case File Review for Fuel Leak Case No. RO0002908 and GeoTracker Global ID T0600196622, Miller Square Park, 2259 First Street, Livermore, CA 94550

Dear Ms. MacLeod and Mr. Uranga:

Alameda County Environmental Health (ACEH) staff has reviewed the fuel leak case file for the above referenced site including the document entitled, "*Work Plan for Lead Delineation in Soil*," dated June 1, 2015 (Work Plan). The Work Plan presents plans to collect soil samples to determine the extent of lead in shallow soil and to collect one grab groundwater sample to delineate the downgradient extent of petroleum hydrocarbons in groundwater.

The proposed scope of work is conditionally approved and may be implemented provided that the technical comments below are incorporated during implementation of the proposed work. Submittal of a revised Work Plan or Work Plan Addendum is not required unless an alternate scope of work outside that described in the Work Plan and technical comments below is proposed. We request that you address the following technical comments, perform the proposed work, and send us the reports described below.

TECHNICAL COMMENTS

1. **Soil Sample Analysis**. The proposal to analyze the soil samples collected within the park for lead using EPA Method 6010 is acceptable. However, we request that the soil samples also be screened in the field with a photoionization detector (PID). If the PID screening indicates that volatile organic compounds may be present or the soil samples have visual evidence of contamination or odor, we request that the soil samples also be analyzed for total petroleum hydrocarbons as gasoline and diesel using EPA Method 8015 or 8260 and benzene, toluene, ethylbenzene, xylenes, and naphthalene using EPA method 8260.

2. **Project Schedule**. The project schedule was discussed on May 5, 2015 during a meeting between representatives of Chevron Environmental Management Company, the City of Livermore, and ACEH. The project schedule in the Work Plan is generally consistent with the schedule discussed on May 5, 2015. Submittal of the results of the proposed work and an Interim Remedial Action Plan (IRAP) on August 13, 2015 is acceptable. The ACEH review period for the IRAP that was discussed on May 5, 2015 was 14 days ending on August 27, 2015 and the public notification period was 30 days ending on September 27, 2015.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Jerry Wickham), and to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- **August 13, 2015** – Sampling Results Report and Interim Remedial Action Plan
  File to be named: SWI_IRAP_R_yyyy-mm-dd RO2908

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachments: Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Colleen Winey, QIC 80201, Zone 7 Water Agency, 100 North Canyons Parkway
Livermore, CA 94551 (*Sent via E-mail to: cwiney@zone7water.com*)

Danielle Stefani, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566 (*Sent via E-mail to: DStefani@lpfire.org*)

John Rigter, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566(*Sent via E-mail to: jrigter@lpfire.org*)

Cheri Sheets, City of Livermore, (*Sent via E-mail to: crsheets@cityoflivermore.net*)

Rosy Ehlert, City of Livermore, (*Sent via E-mail to: rmehlert@cityoflivermore.net*)

Brian Silva, Conestoga-Rovers & Associates, 10969 Trade Center Drive, Suite 107
Rancho Cordova, CA 95670 (*Sent via E-mail to: bsilva@craworld.com*)

Jerry Wickham, ACEH (*Sent via E-mail to: jerry.wickham@acgov.org*)
GeoTracker, eFile

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Director

ENVIRONMENTAL HEALTH SERVICES
ENVIRONMENTAL PROTECTION
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577
(510) 567-6700
FAX (510) 337-9335

August 27, 2015

Ms. Carryl MacLeod (*Sent via E-mail to: cmacleod@chevron.com*)
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583

Mr. Eric Uranga (*Sent via E-mail to: ejuranga@ci.livermore.ca.us*)
City of Livermore Economic Development
1052 S. Livermore Ave.
Livermore, CA 94550

Subject: Schedule Extension for Fuel Leak Case No. RO0002908 and GeoTracker Global ID T0600196622, Miller Square Park, 2259 First Street, Livermore, CA 94550

Dear Ms. MacLeod and Mr. Uranga:

In a Notice to Comply dated August 20, 2015, Alameda County Environmental Health (ACEH) indicated that this case is out of compliance with directives from this agency. In order to regain compliance with directives from this agency and avoid enforcement actions including issuance of a Notice of Violation, ACEH requested that you submit the previously requested "*Sampling Results Report,"* and *"Interim Remedial Action Plan,*" no later than September 3, 2015. The purpose of these documents is to address lead in shallow soil at the park site.

We have received a proposed alternate schedule in correspondence from Chevron Environmental Management Company (Chevron) dated August 26, 2015 (attached). The schedule proposed by Chevron appears to be a reasonable effort to complete the necessary work. Therefore, ACEH agrees that a Notice of Violation will not be issued if the "*Sampling Results Report,*" is submitted no later than November 5, 2015 and the *"Interim Remedial Action Plan,*" is submitted no later than November 19, 2015.

TECHNICAL REPORT REQUEST

Please upload technical reports to the ACEH ftp site (Attention: Jerry Wickham), and to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- **November 5, 2015** – Sampling Results Report
  File to be named: SWI_R_yyyy-mm-dd RO2908

- **November 19, 2015** – Interim Remedial Action Plan
  File to be named: IRAP_R_yyyy-mm-dd RO2908

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at jerry.wickham@acgov.org.

Sincerely,

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297
Senior Hazardous Materials Specialist

Attachments: Correspondence from Chevron Environmental Management dated August 26, 2015
Responsible Party(ies) Legal Requirements/Obligations

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

cc: Colleen Winey, QIC 80201, Zone 7 Water Agency, 100 North Canyons Parkway
Livermore, CA 94551 (*Sent via E-mail to: cwiney@zone7water.com*)

Danielle Stefani, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566 (*Sent via E-mail to: DStefani@lpfire.org*)

John Rigter, Livermore-Pleasanton Fire Department, 3560 Nevada Street
Pleasanton, CA 94566(*Sent via E-mail to: jrigter@lpfire.org*)

Alexis Coulter, Chevron Environmental Management Company, (*Sent via E-mail to: acoulter@chevron.com*)

Cheri Sheets, City of Livermore, (*Sent via E-mail to: crsheets@cityoflivermore.net*)

Rosy Ehlert, City of Livermore, (*Sent via E-mail to: rmehlert@cityoflivermore.net*)

Brian Silva, Conestoga-Rovers & Associates, 10969 Trade Center Drive, Suite 107
Rancho Cordova, CA 95670 (*Sent via E-mail to: bsilva@craworld.com*)

Jerry Wickham, ACEH (*Sent via E-mail to: jerry.wickham@acgov.org*)
GeoTracker, eFile

Attachment

Carryl MacLeod
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6506
cmacleod@chevron.com

August 26, 2015

Mr. Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, CA 94502

Re: 307233 Livermore/ Mills Square Park 2259 First Street

Dear Mr. Wickham:

In a letter dated August 20, 2015 (Attachment), Alameda County Environmental Health (ACEH) requested Chevron Environmental Management Company ("EMC") and the City of Livermore (City) submit the Sampling Results Report (Report) to regain compliance by September 3, 2015.

In an effort to comply with ACEH's request, EMC's consultant GHD (formerly known as CRA), has scheduled the C-57 license driller for the week of September 14, 2015 to conduct the work as outlined in the prepared work plan for shallow lead delineation submitted June 1, 2015.

Upon completion of the field activities, GHD will prepare and submit the Report 45 days following the completion of the work. Following submittal of the Sampling Results Report, GHD will prepare and submit an Interim Remedial Action Plan two weeks later.

EMC respectfully requests an extension on the submittal of the Sampling Results Report and Interim Remedial Action Plan.

If you have any further questions, please do not hesitate to contact me at (925) 790-6506, or cmacleod@chevron.com.

Sincerely,

Carryl MacLeod
Project Manager

Attachment

cc (via email)
Rosy Ehlert, City of Livermore
Cheri Sheets, City of Livermore
Brian Silva, GHD
Alexis Coulter, CEMC
Dilan Roe, ACEH

Attachment 1

Responsible Party(ies) Legal Requirements / Obligations

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)	**REVISION DATE:** May 15, 2014
	ISSUE DATE: July 5, 2005
	PREVIOUS REVISIONS: October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

REQUIREMENTS

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

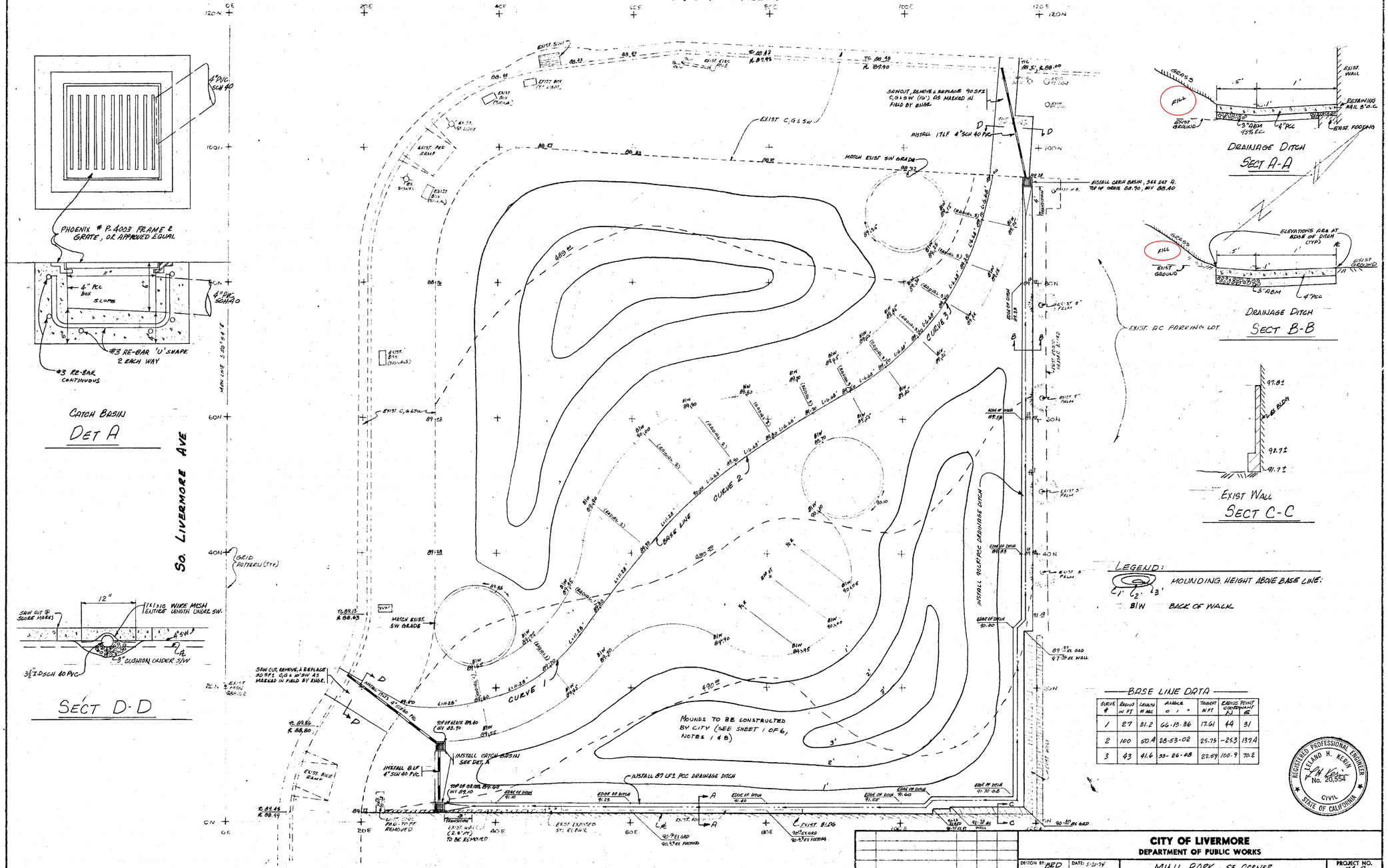
Submission Instructions

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

Appendix B
1974 Grading Plan and Fugro West Inc. Report



BASE LINE DATA

CURVE #	RADIUS IN FT	LENGTH OF ARC	ANGLE ° ' "	TANGENT IN FT	RADIUS POINT COORDINANT N	RADIUS POINT COORDINANT E
1	27	31.2	66-13-36	17.61	44	31
2	100	50.4	28-53-02	25.75	-25.3	137.4
3	43	41.6	55-26-08	22.59	100.9	70.2

LELAND H. KERN
No. 20,554
CIVIL

REV. NO.	DESCRIPTION	DWN. BY	APP. BY	DATE
1	AS BUILT	HP		2-23-77

CITY OF LIVERMORE
DEPARTMENT OF PUBLIC WORKS

DESIGN BY: BED
DATE: 5-21-74
DWN. BY: BED
SCALE: 1" = 6'
CKD. BY:
FIELD BK.
DIRECTOR OF PUBLIC WORKS

MINI PARK - SE CORNER
1ST & SO LIVERMORE
GRADING PLAN

PROJECT NO. 74-9
FILE NO. PR-87
2 of 6

116741
116742

FUGRO WEST, INC.

1000 Broadway, Suite 200
Oakland, California 94607
Tel: (510) 268-0461
Fax: (510) 268-0137

January 6, 2004
Project No. 1121.003

Mr. Neal Snedecor
City of Livermore
Engineering Division
1052 S. Livermore Avenue
Livermore, California 94550-4899

PERMIT 23101

Subject: Soil and Groundwater Investigation Report
Regional Performing Arts Theater Site
Livermore, California

Dear Mr. Snedecor:

With this letter, Fugro West, Inc. (Fugro) presents the results of the soil and groundwater investigation conducted during September 2003 at the referenced site. The purpose of this work was to investigate the potential presence of petroleum hydrocarbons in soil and/or groundwater at the site resulting from the historical use of the site as a service station. This work was conducted on behalf of the City of Livermore (City) as part of the City's redevelopment process. The Site location is illustrated on Plates 1 and 2.

BACKGROUND

Fugro understands that the City of Livermore (City) is considering the purchase of seven parcels that may comprise the future Regional Performing Arts Theater site. Fugro previously completed a Phase 1 Environmental Site Assessment (ESA) dated February 14, 2003, for these parcels. Based on those findings, Fugro recommended completing a subsurface investigation to evaluate soil and groundwater conditions at the Site for the purpose of evaluating potential impacts from the former on-site service station operations.

FIELD INVESTIGATION

Prior to drilling activities, Fugro procured a drilling permit from the Alameda County Zone 7 Water Agency. We also requested borehole clearance by Underground Service Alert (USA) and from a private utility locator at the proposed boring locations.

On September 17, 2003, Fugro advanced three soil probes (B-1 to B-3) to depths of approximately 40 feet below ground surface (bgs) using a limited-access hollow stem auger rig. The driller placed all of the cuttings from the drilling operations into labeled, 55-gallon drums which are stored on adjacent City property pending disposal.

Fugro's field geologist observed drilling operations and prepared detailed logs of the conditions encountered during drilling. Fugro collected soil samples and screened them in the field using an organic vapor meter (OVM) as well as olfactory methods. Soils were classified in accordance with the United Soil Classification System (USCS). Grab groundwater samples were also collected from Borings B-1 through B-3. Upon completions, borings were grouted with neat cement in accordance with permit requirements and the landscaping returned to pre-sampling conditions.

Subsurface Conditions

Based on our field observations, near-surface fill comprised of sand, gravel, silt, brick fragments and concrete debris was encountered from just below the sod to approximately 8 to 14 feet bgs. Near surface fill was underlain with interbedded silty sand, sand, and sandy clay in Borings B-1 through B-3 to approximately 40 feet below ground surface (bgs), the maximum depth explored. Groundwater was encountered in each boring approximately 34 feet bgs during drilling. No free phase hydrocarbons were observed. It should be noted the borings may not have been left open for a sufficient period of time to establish equilibrium groundwater conditions.

Slight staining and hydrocarbon odors were observed in Boring B-2 and Boring B-3 at approximately 23 feet bgs. Field screening of soil samples detected an OVM reading of 1.7 parts per million (ppm) for the soil sample obtained at 30 bgs in Boring B-2.

CHEMICAL TESTING PROGRAM

Soil and grab groundwater samples were retained in containers pre-cleaned by the supplier in accordance with EPA protocol. The samples were placed in a chilled cooler and transported under appropriate chain-of-custody documentation to STL, a State-certified laboratory. Selected samples were submitted for some or all of the following analyses:

- Total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and xylenes (BTEX) and Methyl tert butyl ether (MTBE) using EPA Method 8015m / 8020,
- Total petroleum hydrocarbons as diesel and motor oil (TPHd and TPHmo) using EPA Method 8015m and silica gel cleanup, and
- Total lead using EPA Methods 6010.

Based on the total lead results, soluble lead was also conducted on sample B-2@3' using the Toxicity Leachability Characteristic Proceedure (TCLP).

DISCUSSION OF RESULTS

The analytical testing results for the current field investigation and sampling event are summarized in Table 1 and 2. The analytical reports are presented in Appendix B.

Soil Samples

Except for 9.6 milligrams per kilogram (mg/kg) of TPHd and 3.5 mg/kg of TPHg detected in B-2@30', analyses detected no TPHd, TPHmo, TPHg, BTEX, or MTBE concentrations in soil samples from Borings B-1, B-2, and B-3. The detected TPHd and TPHg concentrations are significantly less than 100 mg/kg, the Environmental Screening Level (ESL) established by the Regional Water Quality Control Board[1] for a residential or commercial setting. Analyses detected 3,700 mg/kg of total lead sample B-2@3', which is significantly greater than ESL[2] criteria for a residential and commercial setting as well as greater than the Total Threshold Limit Concentration (TTLC), one of the criteria used by the State of California to determine whether a soil is considered a hazardous waste for disposal purposes. Analyses for soluble lead using TCLP methods detected no soluble lead in sample B-2@3'.

Grab Groundwater Samples

Analyses detected no TPHmo and MTBE concentrations in the grab groundwater samples from Borings B-1, B-2, and B-3. Analysis detected 1,100 mg/kg of TPHd and 1,600 mg/kg of TPHg in the grab groundwater sample from Boring B-1; 57 mg/kg of TPHd and 90 mg/kg of TPHg in the grab groundwater sample from Boring B-2; and 42,000 mg/kg of TPHd and 18,000 mg/kg of TPHg in the grab groundwater sample from Boring B-3. The detected TPHd and TPHg concentrations in the grab groundwater samples from Boring B-1 and B-2 exceed respective ESLs for drinking water and for ecological receptors at a surface water body. However, groundwater at the site is not considered a source of drinking water and does not discharge to a surface water body. There are no established indoor air quality ESLs for TPHg and TPHd.

No BTEX concentrations were detected in the grab groundwater samples from Borings B-1 and B-2. In the grab groundwater sample from Boring B-3, analysis detected 140 mg/kg of benzene, 47 mg/kg of ethylbenzene, 120 mg/kg of toluene and 1,000 mg/kg of xylenes. Detected benzene and xylene concentrations exceed respective ESLs for drinking water and ecological receptors; however, groundwater at the site is not considered a source of drinking water and does not discharge to a surface water body. Detected TPHd and TPHg concentrations do not exceed respective indoor air quality ESLs.

CONCLUSIONS AND RECOMMENDATIONS

Results of this investigation detected the presence of total lead in near-surface fill material and concentrations of petroleum hydrocarbons, including benzene, and xylene in the groundwater. It is Fugro's opinion that these detected lead and petroleum hydrocarbons contaminants do not pose a significant adverse human health risk to park maintenance workers and City Park users at this time assuming the park is maintained in it's current condition, namely

[1] Table A of the Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater - Interim Final. San Francisco Bay Regional Water Quality Control Board. July 2003

[2] Table A, B and K-3 of the Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater - Interim Final. San Francisco Bay Regional Water Quality Control Board. July 2003

covered with pavement and sod, and that shallow groundwater at the site is not used as a source of drinking water. Because detected petroleum hydrocarbon concentrations do not exceed respective indoor air quality ELS criteria, the presence of petroleum hydrocarbons in groundwater at the site does not pose a significant human health risk for the anticipated possible future use as a performing arts theater.

The source of elevated lead concentration is unknown to Fugro but is likely related to the fill material at the site. The source of detected petroleum hydrocarbons in groundwater is likely associated with the historical service station operations at the site.

Based on our findings, Fugro presents the following recommendations for the City Park:

- If intrusive soil excavation or handling activities are conducted at the City Park, workers should be notified of the potential presence of elevated lead in shallow fill and appropriate dust mitigation should be implemented. Standard dust control methods such as the use of water spray should be sufficient to prevent exposure of workers to lead in the shallow fill.

- Based on the total lead results for sample B-2@3', if shallow fill is excavated from the site to be reused or disposed offsite, that soil should be tested to confirm that total lead concentrations are not hazardous for disposal purposes.

With respect to site redevelopment, Fugro presents the following recommendations:

- Results of this report should be provided to the developer and/or their contractor. Appropriate worker notification and a site-specific health and safety plan should be implemented to protect workers from lead in near-surface fill. In Fugro's opinion, standard dust control methods such as the use of water spray should be sufficient to prevent exposure of workers to lead in the shallow fill. The health and safety plan (HSP) should be prepared by a Certified Industrial Hygienist.

- If staining, chemical odors, or contaminated materials are encountered during the construction activities, we recommend that the City notify Fugro of such conditions and appropriate precautions, investigation, and/or mitigation should be implemented.

- Although it is Fugro's opinion that soil excavated from the site is likely non-hazardous for disposal purposes, results of analyses indicate the possibility that shallow fill may be considered a California Hazardous waste based on total lead concentrations exceeding 1,000 mg/kg. If soil is to be excavated from the site, Fugro recommends additional testing to confirm that disposal at a Class I hazardous waste landfill is not required.

LIMITATIONS

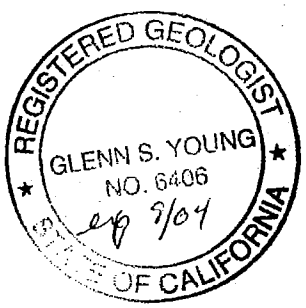
Fugro has prepared this report in a professional manner, using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Fugro shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. Fugro also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report. Fugro believes that conclusions stated wherein to be factual, but no guarantee is made or implied. This report has been prepared for the benefit of the City of Livermore.

CLOSING STATEMENT

We believe this provides the information required at this time. Please call if you have any questions or if we can be of further assistance.

Sincerely,

FUGRO WEST, INC.



Melissa L. Pleva
Staff Engineer & Geologist

Glenn S. Young, RG
Principal Geologist

MLP/GSY:kel

Attachments: Table 1 - Chemical Constituents in Soil
Table 2 - Chemical Constituents in Groundwater
Plate 1 – Vicinity Map
Plate 2 – Site Map
Appendix A - Log of Borings
Appendix B - Analytical Reports

Copies Submitted: (3) Addressee

Table 1
Summary of Analytical Results - Soil
Livermore Performing Arts Center
Livermore, California

Analyte	Units	B-1 3'	B-1 25.5'	B-2 3'	B-2 15.5'	B-2 30'	B-3 3'	B-3 25.5'	TTLC	STLC	ESL (Table B) Residential	ESL (Table B) Commercial/ Industrial	DESL (Table K-3) (Trench/ Construction Worker)
Hydrocarbons													
TPHd[1]	mg/Kg	--	<1.0	--	--	**9.6**	--	<1.0			500	500	23,000
TPHmo[1]	mg/Kg	--	<50	--	--	<50	--	<50			500	1,000	23,000
TPHg	mg/Kg	--	<1.0	--	<1.0	**3.5**	--	<1.0			100	400	23,000
VOCs													
Benzene	mg/Kg	--	<0.005	--	<0.005	<0.005	--	<0.005			0.18	0.38	17
Ethylbenzene	mg/Kg	--	<0.005	--	<0.005	<0.005	--	<0.005			4.7	13	400
Toluene	mg/Kg	--	<0.005	--	<0.005	<0.005	--	<0.005			9.3	9.3	650
Xylenes	mg/Kg	--	<0.005	--	<0.005	<0.005	--	<0.005			1.5	1.5	420
Methyl-tert-butyl-ether (MTBE)	mg/Kg	--	<0.005	--	--	<0.005	--	<0.005			2.0	5.6	2,800
Metals													
Lead	mg/Kg	**21**	--	**3,700**	--	--	**4.8**	--	1,000		200	750	750
Soluble Lead (TCLP)	mg/l	--	--	<0.50	--	--	--	--		5.0			

Notes:

Soil Samples obtained on September 17, 2003
TPHd = Total Petroleum Hydrocarbons as diesel fuel
TPHmo= Total Petroleum Hydrocarbons as motor oil
TPHg= Total Petroleum Hydrocarbons as gasoline
[1] = using silca gel cleanup
< = not detected at or above the listed analytical
mg/kg = milligrams per kilogram
-- = Not Analyzed
Detected concentrations are shown in **Bold**

TTLC = Total Threshold Limit Concentration
STLC = Soluble Threshold Limit Concentration
TCLP = Toxicity Characteristic Leaching Potential
ESL = Environmental Screening Levels established by the SFBRWQCB
SFRWQCB = San Francisco Bay Regional Water Quality Control Board
Table B: ESL for Shallow Soils (≤3m bgs) Interim Final - July 2003
Groundwater is Not a Current or Potential Source of Drinking Water
Table K-3: Direct-Exposure Screening Level (DESL) Interim Final - July 2003
Construction/Trench Worker Exposure Scenario

FUGRO

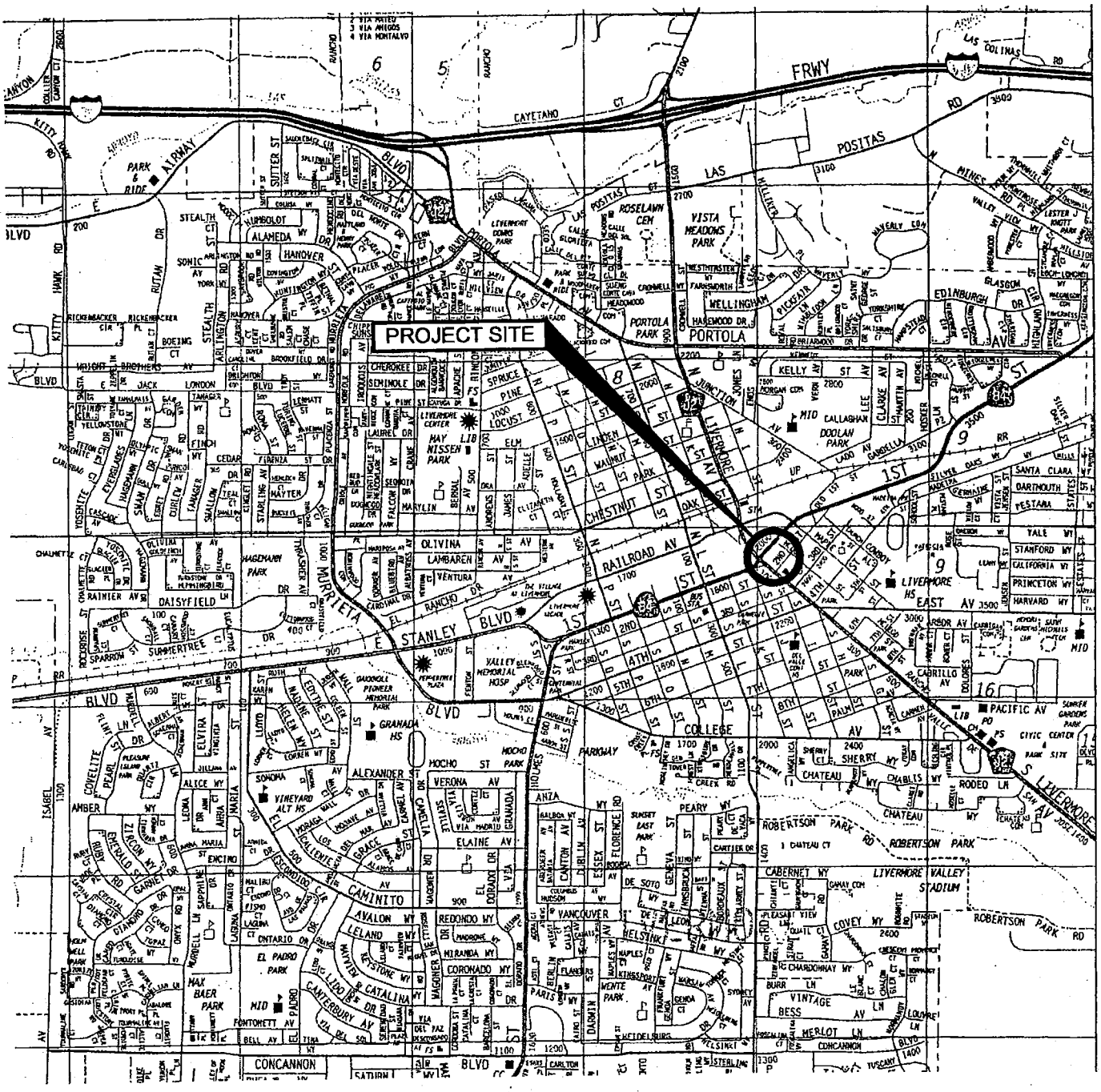
Table 2
Summary of Analytical Results - Groundwater
Livermore Performing Arts Center
Livermore, California

Analyte	Units	B-1	B-2	B-3	ESL (Table B)	GSL (Table F-1b) Indoor Air Quality
Hydrocarbons						
TPHd[1]	µg/L	**1,100**	**57**	**42,000**	640	NE
TPHmo[1]	µg/L	<1,000	<500	<10,000	640	NE
TPHg	µg/L	**1,600**	**90**	**18,000**	500	NE
VOCs						
Benzene	µg/L	<0.5	<0.5	**140**	46	530
Ethylbenzene	µg/L	<0.5	<0.5	**47**	290	14,000
Toluene	µg/L	<0.5	<0.5	**120**	130	500,000
Xylenes	µg/L	<0.5	<0.5	**1,000**	13	150,000
Methyl-tert-butyl-ether (MTBE)	µg/L	<5.0	<5.0	<50	1,800	24,000

Notes:
Soil Samples obtained September 17, 2003
TPHd = Total Petroleum Hydrocarbons as diesel fuel
TPHmo= Total Petroleum Hydrocarbons as motor oil
TPHg= Total Petroleum Hydrocarbons as gasoline
[1] = using silca gel cleanup
< = not detected at or above the listed analytical reporting limit
µg/L = micrograms per liter
-- = Not Analyzed
NE = Not Established

Detected concentrations are shown in **Bold**
ESL = Environmental Screening Levels established by the SFBRWQCB
GSL = Groundwater Screening Levels established by the SFBRWQCB
SFRWQCB = San Francisco Bay Regional Water Quality Control Board
Table B: ESL for Groundwater Interim Final - July 2003
Groundwater is Not a Current or Potential Source of Drinking Water
Table F-1b: GSL for Groundwater is not a current or potential source of drinking water
Groundwater is Not a Current or Potential Source of Drinking Water

FUGRO



NOTE:

This Vicinity Map Is Based On Thomas Guide Maps For San Francisco, Alameda And Contra Costa Counties, California, Maps 695 and 715, YEAR 2000.

NORTH

0 2400 4800

FEET

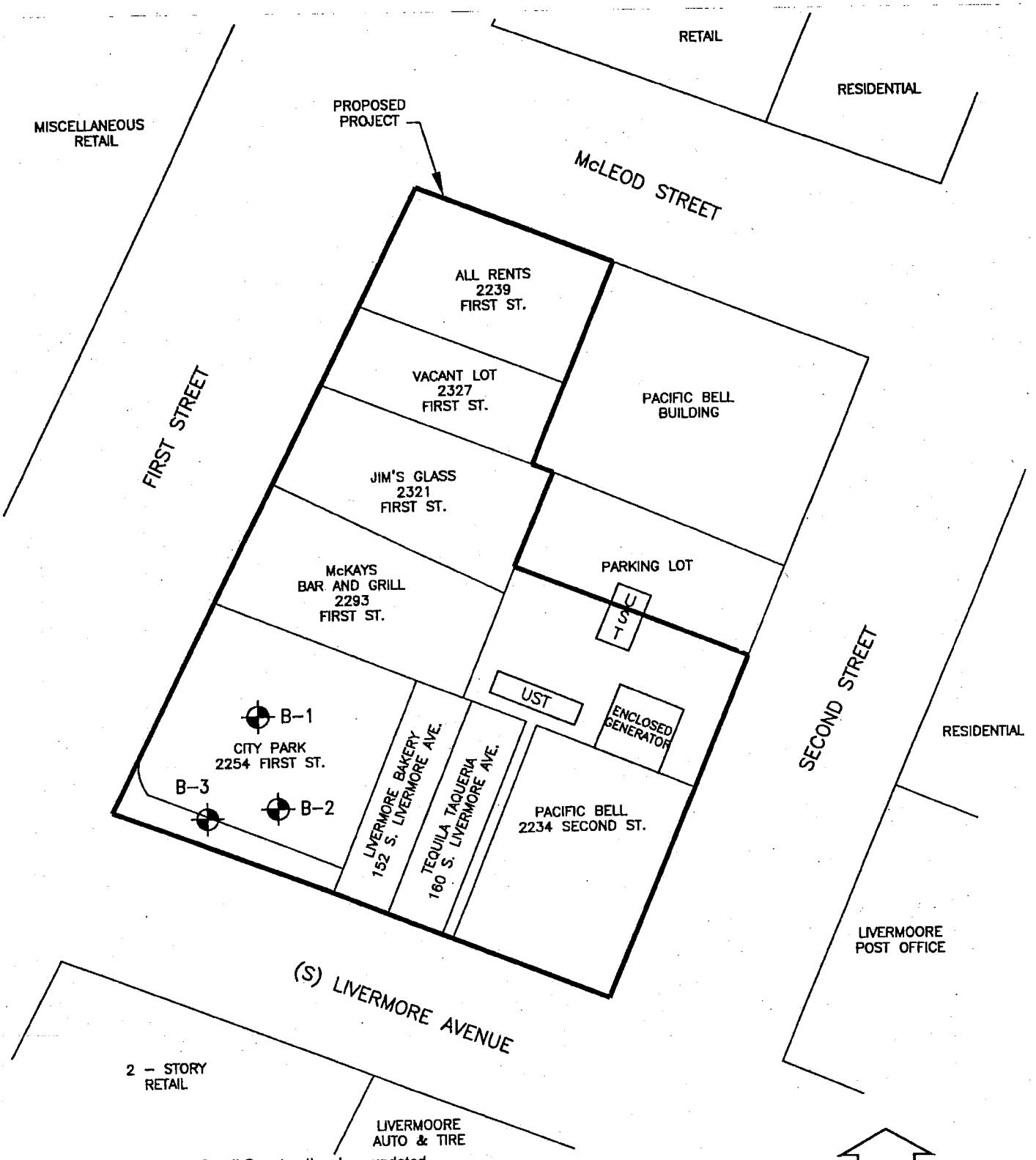
VICINITY MAP

Livermore Performing Arts Center
Livermore, California

PLATE 1

G:\Jobdocs\1121\1121.003\Plates\1121.003-04_rev1.dwg 1-06-04 02:29:42 PM flopez

January 2004
Project No. 1121.003



G:\jobdocs\1121\1121.003\Plates\1121.003-01_rev1.dwg 1-06-04 02:28:44 PM flopez

SOURCE: Provided by Sundt Construction, Inc., undated.

NORTH

0 60 120

FEET

LEGEND

B-3 APPROXIMATE LOCATION OF BORING

UST APPROXIMATE LOCATION OF UNDERGROUND STORAGE TANK

SITE MAP

Livermore Performing Arts Center
Livermore, California

PLATE 2

SEVERN TRENT STL

Submission#: 2003-09-0733

Fugro

October 06, 2003

1000 Broadway Suite 200
Oakland, CA 94607

Attn.: Glenn Young

Project#: 1121.003
Project: Livermore Performing Arts

Dear Mr. Young,

Attached is our report for your samples received on 09/18/2003 11:40
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 11/02/2003 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: tgranicher@stl-inc.com

Sincerely,

Tod Granicher
Project Manager

SEVERN TRENT STL

Submission #: 2003-09-0733

Total Lead

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
B-1 @ 3.0	09/17/2003 09:20	Soil	5
B-2 @ 3.0	09/17/2003 13:35	Soil	8
B-3 @ 3.0	09/17/2003 10:30	Soil	10

SEVERN TRENT STL

Submission #: 2003-09-0733

Total Lead

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s): 3050B
Sample ID: B-1 @ 3.0
Sampled: 09/17/2003 09:26
Matrix: Soil

Test(s): 6010B
Lab ID: 2003-09-0733-5
Extracted: 9/22/2003 17:06
QC Batch: 2003/09/22-04.15

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Lead	21	1.0	mg/Kg	1.00	09/23/2003 19:57	

Submission #: 2003-09-0733

SEVERN TRENT STL

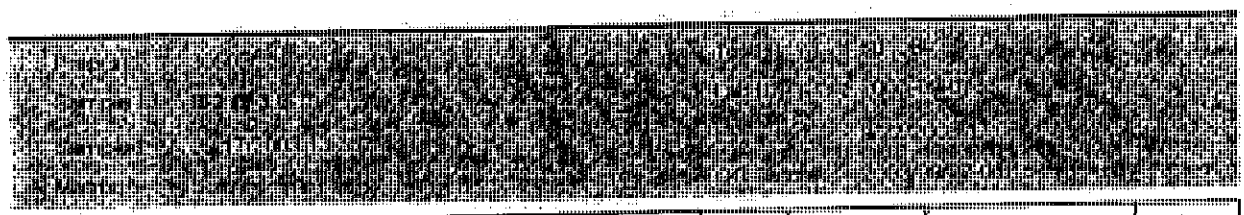
Total Lead

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40



Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Lead	3700	10	mg/Kg	10.00	09/24/2003 13:47	

SEVERN TRENT STL

Submission #: 2003-09-0733

Total Lead

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Lead	4.8	1.0	mg/Kg	1.00	09/23/2003 20:04	

Submission #: 2003-09-0733

Total Lead

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Compound	Conc.	RL	Unit	Analyzed	Flag
Lead	ND	1.0	mg/Kg	09/23/2003 12:09	

SEVERN TRENT STL

Submission #: 2003-09-0733

Total Lead

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Lead	91.2	90.4	100.0	91.2	90.4	0.9	80-120	20		

STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
B-1	09/17/2003 11:30	Water	1
B-2	09/17/2003 15:35	Water	2
B-3	09/17/2003 18:40	Water	3
B-1 @ 25.5	09/17/2003 10:14	Soil	4
B-2 @ 30.0	09/17/2003 14:10	Soil	6
B-3 @ 25.5	09/17/2003 17:10	Soil	9

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s):	5030	Test(s):	8015M
	5030		8021B
Sample ID:	B-1	Lab ID:	2003-09-0733-1
Sampled:	09/17/2003 11:30	Extracted:	9/25/2003 20:50
Matrix:	Water	QC Batch#:	2003/09/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	1600	50	ug/L	1.00	09/25/2003 20:50	g
Benzene	ND	0.50	ug/L	1.00	09/25/2003 20:50	
Toluene	ND	0.50	ug/L	1.00	09/25/2003 20:50	
Ethyl benzene	ND	0.50	ug/L	1.00	09/25/2003 20:50	
Xylene(s)	ND	0.50	ug/L	1.00	09/25/2003 20:50	
MTBE	ND	5.0	ug/L	1.00	09/25/2003 20:50	
Surrogate(s)						
Trifluorotoluene	110.5	58-124	%	1.00	09/25/2003 20:50	
4-Bromofluorobenzene-FID	112.0	50-150	%	1.00	09/25/2003 20:50	

STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s): 5030
Test(s): 8015M
8021B
Sample ID: 2003-09-0733-2
Sampled: 09/17/2003 15:15
Extracted: 09/25/2003 21:22
Matrix: Water
QC Batch#: 2003/09/25-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	90	50	ug/L	1.00	09/25/2003 21:22	g
Benzene	ND	0.50	ug/L	1.00	09/25/2003 21:22	
Toluene	ND	0.50	ug/L	1.00	09/25/2003 21:22	
Ethyl benzene	ND	0.50	ug/L	1.00	09/25/2003 21:22	
Xylene(s)	ND	0.50	ug/L	1.00	09/25/2003 21:22	
MTBE	ND	5.0	ug/L	1.00	09/25/2003 21:22	
Surrogate(s)						
Trifluorotoluene	112.4	58-124	%	1.00	09/25/2003 21:22	
4-Bromofluorobenzene-FID	83.9	50-150	%	1.00	09/25/2003 21:22	

STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	18000	500	ug/L	10.00	09/25/2003 21:54	
Benzene	140	5.0	ug/L	10.00	09/25/2003 21:54	
Toluene	47	5.0	ug/L	10.00	09/25/2003 21:54	
Ethyl benzene	120	5.0	ug/L	10.00	09/25/2003 21:54	
Xylene(s)	1000	5.0	ug/L	10.00	09/25/2003 21:54	
MTBE	ND	50	ug/L	10.00	09/25/2003 21:54	
Surrogate(s)						
Trifluorotoluene	95.0	58-124	%	10.00	09/25/2003 21:54	
4-Bromofluorobenzene-FID	70.4	50-150	%	10.00	09/25/2003 21:54	

STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s): 5035
Sample ID: B-1 @ 2.5'
Sampled: 09/17/2003 10:12
Matrix: Soil

Test(s): 8015M
8021B
Lab ID: 2003-09-0733-2
Extracted: 09/25/2003 13:14
QC Batch #: 2003/09/25-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	09/25/2003 13:14	
Benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 13:14	
Toluene	ND	0.0050	mg/Kg	1.00	09/25/2003 13:14	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 13:14	
Xylene(s)	ND	0.0050	mg/Kg	1.00	09/25/2003 13:14	
MTBE						
Surrogate(s)						
Trifluorotoluene	105.1	53-125	%	1.00	09/25/2003 13:14	
4-Bromofluorobenzene-FID	89.2	58-124	%	1.00	09/25/2003 13:14	

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	3.5	1.0	mg/Kg	1.00	09/25/2003 13:45	
Benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 13:45	
Toluene	ND	0.0050	mg/Kg	1.00	09/25/2003 13:45	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 13:45	
Xylene(s)	ND	0.0050	mg/Kg	1.00	09/25/2003 13:45	
MTBE	ND	0.0050	mg/Kg	1.00	09/25/2003 13:45	
Surrogate(s)						
Trifluorotoluene	108.2	53-125	%	1.00	09/25/2003 13:45	
Trifluorotoluene-FID	115.7	53-125	%	1.00	09/25/2003 13:45	

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

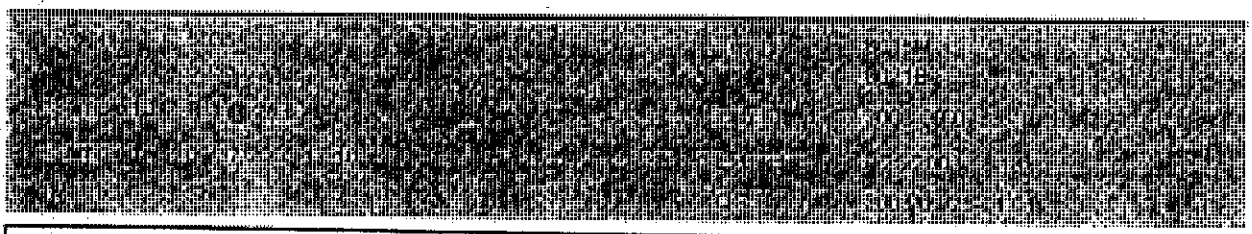
Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40



Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	09/25/2003 18:18	
Benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 18:18	
Toluene	ND	0.0050	mg/Kg	1.00	09/25/2003 18:18	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 18:18	
Xylene(s)	ND	0.0050	mg/Kg	1.00	09/25/2003 18:18	
MTBE	ND	0.0050	mg/Kg	1.00	09/25/2003 18:18	
Surrogate(s)						
Trifluorotoluene	93.3	53-125	%	1.00	09/25/2003 18:18	
4-Bromofluorobenzene-FID	91.0	58-124	%	1.00	09/25/2003 18:18	

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 5035
Method Blank
Soil
Test(s): 8015M
QC Batch #: 2003/09/25-01.01
MB: 2003/09/25-01.01-003
Date Extracted: 09/25/2003 07:22

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	09/25/2003 07:22	
Benzene	ND	0.0050	mg/Kg	09/25/2003 07:22	
Toluene	ND	0.0050	mg/Kg	09/25/2003 07:22	
Ethyl benzene	ND	0.0050	mg/Kg	09/25/2003 07:22	
Xylene(s)	ND	0.0050	mg/Kg	09/25/2003 07:22	
MTBE	ND	0.0050	mg/Kg	09/25/2003 07:22	
Surrogates(s)					
Trifluorotoluene	97.6	53-125	%	09/25/2003 07:22	
4-Bromofluorobenzene-FID	97.8	58-124	%	09/25/2003 07:22	

STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 5035 | Test(s): 8015M
Method Blank | Soil | QC Batch #: 2003/09/25-01.04
MB: 2003/09/25-01.04-007 | Date Extracted: 09/25/2003 10:01

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	09/25/2003 10:01	
Benzene	ND	0.0050	mg/Kg	09/25/2003 10:01	
Toluene	ND	0.0050	mg/Kg	09/25/2003 10:01	
Ethyl benzene	ND	0.0050	mg/Kg	09/25/2003 10:01	
Xylene(s)	ND	0.0050	mg/Kg	09/25/2003 10:01	
MTBE	ND	0.0050	mg/Kg	09/25/2003 10:01	
Surrogates(s)					
Trifluorotoluene	92.9	53-125	%	09/25/2003 10:01	
4-Bromofluorobenzene-FID	82.8	58-124	%	09/25/2003 10:01	

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 5030
Method Blank
MB:2003/09/25-01.05-002

Water

Test(s): 8015M
QC Batch #:2003/09/25-01.05
Date Extracted: 09/25/2003 07:15

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	09/25/2003 07:15	
Benzene	ND	0.5	ug/L	09/25/2003 07:15	
Toluene	ND	0.5	ug/L	09/25/2003 07:15	
Ethyl benzene	ND	0.5	ug/L	09/25/2003 07:15	
Xylene(s)	ND	0.5	ug/L	09/25/2003 07:15	
MTBE	ND	5.0	ug/L	09/25/2003 07:15	
Surrogates(s)					
Trifluorotoluene	98.7	58-124	%	09/25/2003 07:15	
4-Bromofluorobenzene-FID	80.0	50-150	%	09/25/2003 07:15	

STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

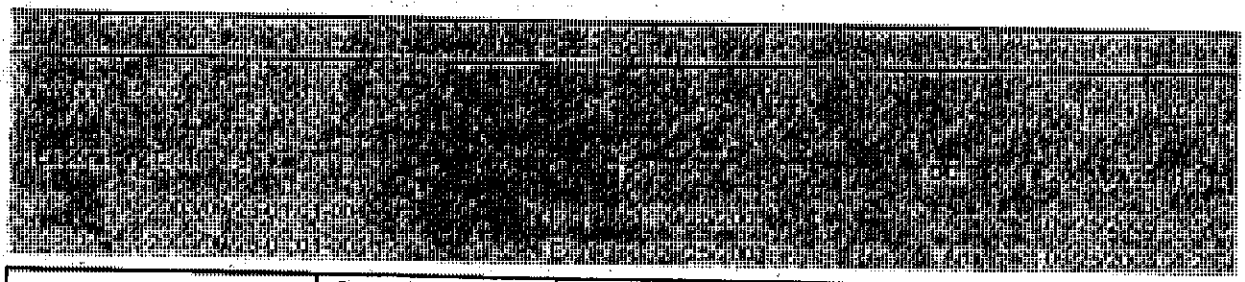
Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40



Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	0.0979	0.0989	0.1000	97.9	98.9	1.0	77-123	35		
Toluene	0.0953	0.0960	0.1000	95.3	96.0	0.7	78-122	35		
Ethyl benzene	0.0942	0.0964	0.1000	94.2	96.4	2.3	70-130	35		
Xylene(s)	0.279	0.286	0.300	93.0	95.3	2.4	75-125	35		
Surrogates(s)										
Trifluorotoluene	500	486	500	100.0	97.2		53-125			

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	0.472	0.527	0.500	94.4	105.4	11.0	75-125	35		
Surrogates(s)										
4-Bromofluorobenzene-FID	445	512	500	89.0	102.4		58-124			

Submission #: 2003-09-0733

STL

Gas/BTEX Compounds by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

[illegible]

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	0.494	0.485	0.500	98.8	97.0	1.8	75-125	35		
Surrogates(s)										
4-Bromofluorobenzene-FID	475	512	500	95.0	102.4		58-124			

SEVERN TRENT STL

Submission #: 2003-09-0733

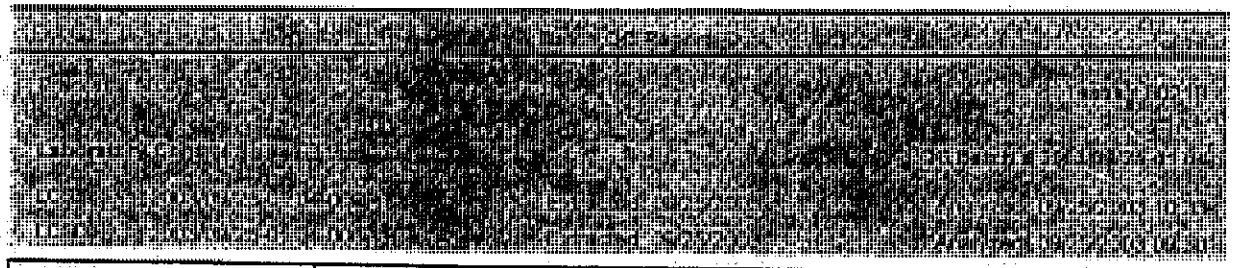
Gas/BTEX Compounds by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40



Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	0.0923	0.0910	0.1000	92.3	91.0	1.4	77-123	35		
Toluene	0.0931	0.0909	0.1000	93.1	90.9	2.4	78-122	35		
Ethyl benzene	0.0946	0.0910	0.1000	94.6	91.0	3.9	70-130	35		
Xylene(s)	0.278	0.269	0.300	92.7	89.7	3.3	75-125	35		
Surrogates(s)										
Trifluorotoluene	483	461	500	96.6	92.2		53-125	0		

SEVERN TRENT STL

Submission #: 2003-09-0733

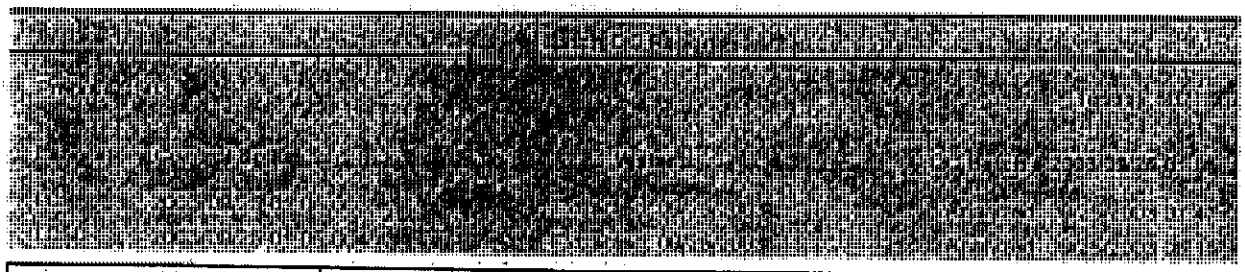
Gas/BTEX Compounds by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40



Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	97.9	94.4	100.0	97.9	94.4	3.6	77-123	20		
Toluene	97.8	94.4	100.0	97.8	94.4	3.5	78-122	20		
Ethyl benzene	96.2	93.3	100.0	96.2	93.3	3.1	70-130	20		
Xylene(s)	284	274	300	94.7	91.3	3.7	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene	594	470	500	118.8	94.0		50-150			

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 5030B Test(s): 8015M

Laboratory Control Spike Water QC Batch #: 2003/09/25-01.05

LCS: 2003/09/25-01.05-005 Extracted: 09/25/2003 Analyzed: 09/25/2003 08:50

LCSD: 2003/09/25-01.05-006 Extracted: 09/25/2003 Analyzed: 09/25/2003 09:22

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	510	505	500	102.0	101.0	1.0	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	400	392	500	80.0	78.4		50-150			

STL

Submission #: 2003-09-0733

Gas/BTEX Compounds by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 287-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Legend and Notes

Result Flag

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
B-2 @ 15.5	09/17/2003 13:55	Soil	7

STL

Submission #: 2003-09-0733

Gas/BTEX by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s):	5035	Test(s):	8015M 8021B
Sample ID:	B-2 @ 15.5	Lab ID:	2003-09-0733-A
Sampled:	09/17/2003 13:55	Extracted:	9/25/2003 14:17
Matrix:	Soil	QC Batch#:	2003/09/25-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	1.00	09/25/2003 14:17	
Benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 14:17	
Toluene	ND	0.0050	mg/Kg	1.00	09/25/2003 14:17	
Ethyl benzene	ND	0.0050	mg/Kg	1.00	09/25/2003 14:17	
Xylene(s)	ND	0.0050	mg/Kg	1.00	09/25/2003 14:17	
Surrogate(s)						
Trifluorotoluene	108.0	53-125	%	1.00	09/25/2003 14:17	
4-Bromofluorobenzene-FID	90.0	58-124	%	1.00	09/25/2003 14:17	

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 5035

Test(s): 8015M

Method Blank

Solid

QC Batch #:2003/09/25-01.04

MB: 2003/09/25-01.04-007

Date Extracted: 09/25/2003 10:01

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	1.0	mg/Kg	09/25/2003 10:01	
Benzene	ND	0.0050	mg/Kg	09/25/2003 10:01	
Toluene	ND	0.0050	mg/Kg	09/25/2003 10:01	
Ethyl benzene	ND	0.0050	mg/Kg	09/25/2003 10:01	
Xylene(s)	ND	0.0050	mg/Kg	09/25/2003 10:01	
Surrogates(s)					
Trifluorotoluene	92.9	53-125	%	09/25/2003 10:01	
4-Bromofluorobenzene-FID	82.8	58-124	%	09/25/2003 10:01	

STL

Submission #: 2003-09-0733

Gas/BTEX by 8015M/8021

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Spike

QC Batch #: 2003/09/25-01.04

LCS: 2003/09/25-01.04-002

Extracted: 09/25/2003

Analyzed: 09/25/2003 07:25

LCSD: 2003/09/25-01.04-003

Extracted: 09/25/2003

Analyzed: 09/25/2003 07:57

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Gasoline	0.494	0.485	0.500	98.8	97.0	1.8	75-125	35		
Surrogates(s)										
4-Bromofluorobenzene-FID	475	512	500	95.0	102.4		58-124			

SEVERN TRENT STL

Submission #: 2003-09-0733

Gas/BTEX by 8015M/8021

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 5035

Test(s): 8021B

Laboratory Control Spike

Soil

QC Batch #: 2003/09/25-01.04

LCS: 1-2003/09/25-01.04-006

Extracted: 09/25/2003

Analyzed: 09/25/2003 10:33

LCSD: 2003/09/25-01.04-006

Extracted: 09/25/2003

Analyzed: 09/25/2003 09:30

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	0.0923	0.0910	0.1000	92.3	91.0	1.4	77-123	35		
Toluene	0.0931	0.0909	0.1000	93.1	90.9	2.4	78-122	35		
Ethyl benzene	0.0946	0.0910	0.1000	94.6	91.0	3.9	70-130	35		
Xylene(s)	0.278	0.269	0.300	92.7	89.7	3.3	75-125	35		
Surrogates(s)										
Trifluorotoluene	483	461	500	96.6	92.2		53-125	0		

SEVERN TRENT STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
B-1 @ 25.5	09/17/2003 10:14	Soil	4
B-2 @ 30.0	09/17/2003 14:10	Soil	6
B-3 @ 25.5	09/17/2003 17:10	Soil	9

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	09/30/2003 00:04	
Motor Oil	ND	50	mg/Kg	1.00	09/30/2003 00:04	
Surrogate(s)						
o-Terphenyl	99.1	60-130	%	1.00	09/30/2003 00:04	

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s): 3550/8015M
Test(s): 8015M
Sample ID: B-2 @ 5.00
Lab ID: 2003-09-0733-6
Sampled: 09/17/2003 15:10
Extracted: 9/23/2003 15:21
Matrix: Soil
QC Batch: 2003/09/23-06.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	9.8	1.0	mg/Kg	1.00	10/03/2003 08:30	ndp
Motor Oil	ND	50	mg/Kg	1.00	10/03/2003 08:30	
Surrogate(s)						
o-Terphenyl	96.2	60-130	%	1.00	10/03/2003 08:30	

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s): 3550/8015M
Sample ID: ES-B-2.5
Sampled: 09/17/2003 17:10
Matrix: Soil
Test(s): 8015M
Lab ID: 2003-09-0733-9
Extracted: 09/23/2003 18:21
QC Batch#: 2003/09/23-06.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	ND	1.0	mg/Kg	1.00	10/03/2003 07:59	
Motor Oil	ND	50	mg/Kg	1.00	10/03/2003 07:59	
Surrogate(s)						
o-Terphenyl	88.6	60-130	%	1.00	10/03/2003 07:59	

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/16/2003 11:40

Batch QC Report

Prep(s): 3550/3015M
Method Blank
MB 2003/09/23-06_10.00

Soil

Test(s): 8015M
QC Batch #: 2003/09/23-06.10
Date Extracted: 09/23/2003 18:21

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	1	mg/Kg	09/24/2003 09:34	
Motor Oil	ND	50	mg/Kg	09/24/2003 09:34	
Surrogates(s)					
o-Terphenyl	92.8	60-130	%	09/24/2003 09:34	

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 3550/8015M
Method Blank
MB-2003/09/28-03.10-067
Soil
Test(s): 8015M
QC Batch #: 2003/09/29-03.10
Date Extracted: 09/29/2003 10:00

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	1	mg/Kg	09/29/2003 16:09	
Motor Oil	ND	50	mg/Kg	09/29/2003 16:09	
Surrogates(s)					
o-Terphenyl	84.6	60-130	%	09/29/2003 16:09	

SEVERN TRENT STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 3550/8015M

Test(s): 8015M

Laboratory Control Spike

QC Batch #: 2003/09/23-06.10

LCS: 2003/09/23-06.10-002 Extracted: 09/23/2003 Analyzed: 09/24/2003 08:33

LCSD: 2003/09/23-06.10-003 Extracted: 09/23/2003 Analyzed: 09/25/2003 09:04

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	39.6	40.1	40.8	97.1	97.3	0.2	60-130	25		
Surrogates(s)										
o-Terphenyl	19.2	20.0	20.0	96.1	99.8		60-130	0		

SEVERN TRENT STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 3550/8015M

Test(s): 8015M

Laboratory Control Spike

Soil

QC Batch #: 2003/09/29-03.10

LCS: 2003/09/29-03.10-002

Extracted: 09/29/2003

Analyzed: 09/29/2003 14:47

LCSD: 2003/09/29-03.10-003

Extracted: 09/29/2003

Analyzed: 09/29/2003 15:28

Compound	Conc. mg/Kg		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	39.1	37.7	41.8	94.0	90.6	3.7	60-130	25		
Surrogates(s)										
o-Terphenyl	20.4	19.4	20.0	101.9	97.2		60-130	0		

SEVERN TRENT STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Legend and Notes

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

SEVERN TRENT STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
B-1	09/17/2003 11:30	Water	1
B-2	09/17/2003 15:35	Water	2
B-3	09/17/2003 18:40	Water	3

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Prep(s): 3510/8015M
Sample ID: B-1
Sampled: 09/17/2003 11:30
Matrix: Water

Test(s): 8015M
Lab ID: 2003-09-0733-11
Extracted: 9/22/2003 14:29
QC Batch#: 2003/09/22-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	1100	100	ug/L	2.00	09/27/2003 06:41	ndp
Motor Oil	ND	1000	ug/L	2.00	09/27/2003 06:41	
Surrogate(s)						
o-Terphenyl	84.8	60-130	%	2.00	09/27/2003 06:41	

STL

Submission #: 2003-09-0733

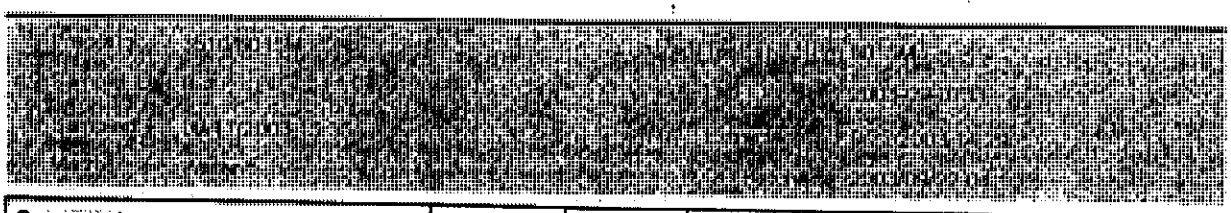
TEPH w/ Silica Gel Clean-up

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40



Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	57	50	ug/L	1.00	09/26/2003 00:53	ndp
Motor Oil	ND	500	ug/L	1.00	09/26/2003 00:53	
Surrogate(s)						
o-Terphenyl	65.5	60-130	%	1.00	09/26/2003 00:53	

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Perfoming Arts

Received: 09/18/2003 11:40

Prep(s):	3510/8015M	Test(s):	8015M
Sample ID:	B-S[illegible]	Lab ID:	2003-09-0733-3
Sampled:	09/17/2003 15:40	Extracted:	9/22/2003 14:29
Matrix:	Water	QC Batch#:	2003/09/22-04.10

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Diesel	42000	1000	ug/L	20.00	09/29/2003 13:51	ndp
Motor Oil	ND	10000	ug/L	20.00	09/29/2003 13:51	
Surrogate(s)						
o-Terphenyl	NA	60-130	%	20.00	09/29/2003 13:51	sd

SEVERN TRENT STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 3510/8015M
Method Blank
MB: 2003/09/22-04.10-001

Water

Test(s): 8015M
QC Batch # 2003/09/22-04.10
Date Extracted: 09/22/2003 14:29

Compound	Conc.	RL	Unit	Analyzed	Flag
Diesel	ND	50	ug/L	09/24/2003 13:09	
Motor Oil	ND	500	ug/L	09/24/2003 13:09	
Surrogates(s)					
o-Terphenyl	81.5	60-130	%	09/24/2003 13:09	

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro
Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Batch QC Report

Prep(s): 3510/8015M — Test(s): 8015M

Laboratory Control Spike — Water — QC Batch # 2003/09/22-04.10

LCS 2003/09/22-04.10-002 — Extracted: 09/22/2003 — Analyzed: 09/24/2003 13:40
LCSD 2003/09/22-04.10-003 — Extracted: 09/22/2003 — Analyzed: 09/24/2003 14:11

Compound	Conc. ug/L		Exp.Conc.	Recovery %		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Diesel	841	852	1000	84.1	85.2	1.3	60-130	25		
Surrogates(s)										
o-Terphenyl	17.0	17.1	20.0	85.0	85.4		60-130	0		

STL

Submission #: 2003-09-0733

TEPH w/ Silica Gel Clean-up

Fugro

Attn.: Glenn Young

1000 Broadway Suite 200
Oakland, CA 94607
Phone: (510) 267-4424 Fax: (510) 268-0137

Project: 1121.003
Livermore Performing Arts

Received: 09/18/2003 11:40

Legend and Notes

Result Flag

ndp

Hydrocarbon reported does not match the pattern of our Diesel standard

sd

Surrogate recovery not reportable due to required dilution.

CHAIN OF CUSTODY

2003-09-0733

78847

PAGE 1 OF 1

PROJECT NAME: Livermore Performing Arts

PROJECT NO.: 1121.003

PROJECT CONTACT: Coleman Young

SAMPLED BY: Obi Nzeribi

LAB: STL

TURNAROUND: 10 day

REQUESTED BY: Obi Nzeribi

LABORATORY I.D. NUMBER	FIELD SAMPLE I.D.	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	CONTAINERS: VOA	CONTAINERS: LITER	CONTAINERS: PINT	CONTAINERS: TUBE	PRESERVATIVE: HCL	PRESERVATIVE: H_2SO_4	PRESERVATIVE: HNO_3	PRESERVATIVE: ICE	PRESERVATIVE: OTHER	PRESERVATIVE: NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: TPH-g (BTEX, MTBE, 8013 and 8020)	TPH-d, TPH-mo - w/ SiGel clean up (8015)	VOCs (8260)	CAM 17 Titles 22 Metals (6000/7000)	Lead (6010)	TPH-g & BTEX in soil	EDF	Chromatograms
	B-1	X			3	1			X			X		X	09	17	03	1130		X	X						
	B-2	X			3	1			X			X		X	09	17	03	1535		X	X						
	B-3	X			3	1			X			X		X	09	17	03	1830		X	X						
	B-1@25.5		X					1				X		X	09	17	03	1017		X	X						
	B-1@3.0		X					1				X		X	09	17	03	0920					X				
	B-2@30.0		X					1				X		X	09	17	03	1130		X	X						
	B-2@15.5		X					1				X		X	09	17	03	1345					X				
	B-2@3.0		X					1				X		X	09	17	03	1335					X				
	B-3@25.5		X					1				X		X	09	17	03	1710		X	X						
	B-3@3.0		X					1				X		X	09	17	03	1630					X				

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
[signature]	9/18/03 1140	Denise Barrington	9/18/03 @ 1140
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)	DATE/TIME

COMMENTS & NOTES: Lo. Occ

FUGRO WEST, INC.
1000 Broadway, Suite 200
Oakland, California 94607
Tel: 510.268.0461 Fax: 510.268.0137

s:\server migration\data\template\chain of custody

Appendix C
Summary of Previous Environmental Investigation

PREVIOUS ENVIRONMENTAL INVESTIGATION AND REMEDIATION
FORMER STANDARD OIL STATION 30-7233
2259 FIRST STREET, LIVERMORE, CALIFORNIA

September 2003 Investigation

The City of Livermore Engineering Division, as part of a redevelopment plan, retained Fugro West, Inc. (Fugro) to investigate soil and groundwater conditions beneath Mills Square Park to evaluate the potential presence of petroleum hydrocarbons resulting from the historic use of the site as a service station. Fugro advanced three soil borings onsite. Details can be found in Fugro's January 6, 2004 *Soil and Groundwater Investigation Report.*

September 2005 UST Removal

In September 2005, an orphan underground storage tank (UST) was encountered beneath the sidewalk on the southwest corner of the site. At the direction of the Livermore-Pleasanton Fire Department the UST was removed, soil samples collected, and the excavated soil was backfilled into the UST pit. Chevron was not involved with the tank removal and was contacted later by ACEH to investigate whether any other USTs remained in Mills Square Park. Additional information is available in Consolidated Engineering Laboratories' October 4, 2005, *Environmental Sampling, Testing and Evaluation of Soil* report.

August 2006 Geophysical Investigation

Cambria Environmental Technology, Inc. (Cambria), now Conestoga-Rovers & Associates (CRA), contracted NORCAL Geophysical Consultants, Inc. to determine if any USTs still remained in place. Two suspected tanks were identified in the southwest corner of the park, measuring approximately 5 by 7 feet and located approximately 3 feet below grade (fbg). More information is available in Cambria's December 22, 2006 *Subsurface Investigation Report*.

September and October 2006 Site Investigation

Cambria observed Woodward Drilling Company, Inc. advance borings SB1 through SB5 in the vicinity of the former dispenser islands and suspected USTs. More information is available in Cambria's December 22, 2006 *Subsurface Investigation Report*.

June 2007 Tank Removal

On June 20, 2007, CRA observed Gettler-Ryan Inc. remove two 750 gallon single-wall steel gasoline USTs (Tank 1 and Tank 2) and approximately 27 feet of associated product piping. CRA collected compliance soil samples from beneath the ends and middle of both Tank 1 and Tank 2 and from below the pipes protruding from the northwestern wall of the tank pit. More information is available in CRA's August 17, 2007 *Underground Storage Tank Removal and Compliance Sampling Report*.

January and February 2008 Site Investigation

CRA observed Gregg Drilling & Testing, Inc. (Gregg), RSI Drilling, and Vironex Environmental Field Services advance soil borings CPT1, CPT2 and SB6 through SB9, shallow soil borings SSB1 through SSB11 (for lead analysis), and install vapor probes VP-1 through VP 3, both on and offsite. More information is available in CRA's March 27, 2008 *Subsurface Investigation Report and Well Installation Workplan*.

October and November 2008 Site Investigation

CRA observed Gregg Drilling advance soil borings CPT3 through CPT5 and SB10 through SB12, both on and offsite. CRA re-sampled soil vapor probe VP1 to confirm previous soil vapor data. Additional information is available in CRA's March 5, 2009 *Subsurface Investigation Report*.

March and April 2010 Monitoring Well Installation:

On March 29 through April 12, 2010 CRA observed Gregg Drilling install deep wells MW-1 through MW-6 and shallow wells MW-7 through MW-9. Additional information is available in CRA's June 3, 2010 *Well Installation Report.*

2011 Corrective Action Plan

As requested by ACEH, CRA submittal a *Draft Corrective Action Plan* (CAP) dated May 3, 2011. In the CAP, CRA recommended monitored natural attenuation and additional site assessment to define the extent of hydrocarbons in groundwater. In response to the ACEH June 9, 2011 letter and a meeting with Jerry Wickham of ACEH on August 3, 2011, CRA submitted a *Work Plan for Feasibility Testing and Additional Assessment*. In the report CRA proposed surfactant to remove LNAPL detected in well MW-7, followed by a gypsum land application and sulfate canister installations in well MW-7 to enhance bioremediation of dissolved hydrocarbons. Additional onsite and offsite wells were also proposed.

2014 and 2015 Lead Investigation Activities

On October 7 and 8, 2014 (All Well Abandonment) and January 20, 2015 (Penecore Drilling) GHD oversaw the advancement of onsite shallow borings HA-1 through HA-7. On September 14 through 17, 2015, GHD oversaw Gregg Drilling advance onsite borings HA-8 through HA-28 and offsite boring SB-13. All onsite borings were advanced to assess lead levels in shallow soil. Detected concentrations of lead ranged from 5.29 milligrams per kilograms (mg/kg) (HA-6 @ 3fbg) to 4,990 mg/kg (HA-19 @ 3 fbg). In order to delineate the downgradient extent of petroleum hydrocarbons in shallow groundwater, offsite boring SB-13 was advanced to 36 fbg; however, no groundwater was observed in the boring after waiting an hour. This is most likely due to the ongoing drought. A soil sample was collected at 35 fbg in lieu of the groundwater sample. The soil was analyzed for total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene and total xylenes (BTEX). No concentrations were detected for TPHg or BTEX at or above the laboratory reporting limits. Additional information is available in GHD's November 5, 2015 *Sampling Results Report.*

Appendix D
Updated Lead Risk Evaluation

Memorandum

To:	Brian Silva	Ref. No.:	312264
From:	Tina LePage/April Gowing/kf/2	Date:	November 12, 2015

Re: Updated Lead Risk Evaluation, Former Standard Oil Station 307233
2259 First Street, Livermore, California

1. Introduction

On behalf of Chevron Environmental Management Company (CEMC), GHD has updated the 2012 lead Risk Evaluation (RE) for the Former Standard Oil Station 307233 located at 2259 First Street, California (Site). Soil sampling has been conducted at the Site since 2003, following the detection of lead in the shallow soils. The purpose of the RE was to incorporate new lead soil data collected in 2014 and 2015 and evaluate whether lead detected in site shallow soil could pose risks/hazards that are above acceptable levels to human health based the current use of the Site.

2. Analytical Data

2.1 Lead Soil Data

The soil analytical data set considered in the RE includes soil data collected during the years 2003, 2006, 2007, 2008, 2010, 2014, and 2015. In addition, the data set evaluated for the purposes of the RE was limited to include only those soil samples taken from depths of less than 10 feet below ground surface (ft bgs), as the receptors are not expected to be exposed to soil from depths greater than 10 ft bgs. The soil analytical data set applied in the RE therefore includes soil data collected from the following locations: SB6, SB7, SB8, SB9, SSB1, SSB2, SSB3, SSB4, SSB5, SSB6, SSB7, SSB8, SSB9, SSB10, SSB11, VP-1, VP-2, VP-3, EX1, EX2, EX3, EX4, EX5, EX6, P1, B1, B2, B3, HA-1, HA-2, HA-3, HA-4, HA-5, HA-6, HA-7, HA-8, HA-9, HA-10, HA-11, HA-12, HA-13, HA-14, HA-15, HA-16, HA-17, HA-18, HA-19, HA-20, HA-21, HA-22, HA-23, HA-24, HS-25, HA-26, HA-27, and HA-28. The maximum detected concentration for lead from this data set was compared to the revised screening level of 80 mg/kg under a residential land use scenario as presented in the document entitled, "*Revised California Human Health Screening Level for Lead*" dated May 18, 2009 (OEHHA, 2009). The residential screening level was exceeded by the lead maximum detected concentration of 3,700 milligrams per kilogram (mg/kg) (B-2; 3 ft bgs, 2003) and as such the RE was conducted. The soil sample from HA-19 at 3 ft bgs had an initial concentration of 4,990 mg/kg, however the sample was reanalyzed two additional times to confirm the result. The reanalyzed results were 1,340 mg/kg and 2,605 mg/kg. These three analytical results were averaged (2978.3 mg/kg) and this average concentration was used in the dataset.

GHD Limited
651 Colby Drive Waterloo Ontario N2V 1C2 Canada
T 519 884 0510 **F** 519 884 0525 **W** www.ghd.com

2.2 Lead 95% Upper Confidence Level

For the RE, a 95 percent upper confidence limit (95% UCL) of the mean was calculated for lead. The 95% UCL was determined based on the observed data distribution and the percentage of censored data points (non-detected results) consistent with USEPA's ProUCL Version 5.0.00 software, which was released in September 2013. The methods incorporated in this software are described in USEPA (2013) which has been used as the primary reference document for the UCL methodologies. The 95% UCL of the lead in soil at the Site was determined to be 337 mg/kg as shown in Table 1. The ProUCL output for the 95% UCL is provided in Attachment A.

3. Lead Risk Evaluation

The basis of this RE was to evaluate the potential for risks to human health due to lead in Site soil. It should be noted that the Site is located in an area of commercial land use. The intended future land use for the Site is not expected to change and will continue to be used for parkland use. As such, the identified human receptors evaluated in the risk evaluation (RE) were limited to a parkland user (child) and commercial worker (adult) that may be exposed to direct contact with Site soils.

3.1 Parkland User

The parkland user could be a child that may be impacted by lead in soil. The DTSC (2011) lead risk assessment spreadsheet (Lead Spread8) for lead exposure in children was used to determine exposure levels for residents within the parkland, based on the assumption that the child resident is considered to be more sensitive than the adult resident. Given that there is no playground equipment or designated play areas within the park, it has been assumed that a child park user would only visit the park for half a day per week (0.5 day per week). Based on this exposure the Lead Spread8 spreadsheet (see Table 2) calculated a PRG-90 for a child of 1,079 mg/kg, which is above the 95% UCL of 337 mg/kg. The 95% UCL of 337 mg/kg was used as the exposure point concentration (EPC) for comparison to the calculated PRG-90.

3.2 Commercial Worker

The commercial worker would be an adult that may be impacted by lead in soil. The DTSC (2011) lead risk assessment spreadsheet is a modified version of USEPA's (2009) Adult Lead Model (ALM) which incorporates DTSC recommendations for evaluating commercial worker exposures to lead in soil. Due to the commercial worker mostly working indoors and having limited direct exposure to the lead in soil, it was assumed that the worker may be exposed for 100 days/year (2 day/week for 50 weeks/year) which resulted in the calculated PRG-90 of 795 mg/kg, which is above the soil 95 % UCL of 337 mg/kg for lead. Table 3 presents the calculated PRG-90 for the commercial worker. The 95% UCL of 337 mg/kg was used as the exposure point concentration (EPC) for comparison to the calculated PRG-90.

4. Summary and Conclusions

PRG90 values were calculated using the Lead Spread8 spreadsheet and ALM provided by DTSC. Based on the above exposure assumptions, the calculated PRG90 values (1,079 mg/kg for parkland user and 795 mg/kg for commercial worker) were above the 95% UCL (337 mg/kg) for lead. As a result, the levels of

lead within the soil of the park will not result in a concern for either a child or commercial worker use of the park.

5. References

DTSC, 2011. Lead Risk Assessment Spreadsheet8, California Department of Toxic Substances Control (DTSC), September 2011.

OEHHA, 2009. Revised California Human Health Screening Level for Lead, Office of Environmental Health Hazard Assessment (OEHHA), May 18, 2009.

USEPA, 2009. Adult Lead Model (ALM) spreadsheet, United States Environmental Protection Agency, Washington, DC, (MS Excel). http://www.epa.gov/superfund/lead/products.htm

USEPA, September 2013. ProUCL Version 5.0.00 Technical Guide. United States Environmental Protection Agency, Office of Research and Development, Washington DC. EPA/600/R-07/041.

Table 1

Exposure Point Concentration (EPC) Summary for Chemicals of Potential Concern in Soil
Former Standard Oil Station 307233
2259 First Street
Livermore, California

Scenario Timeframe: Current/Future
Medium: Soil
Exposure Medium: Soil

Chemical of Potential Concern	Units	Mean [1]	Data Distribution [2]	Maximum Detected Concentration	Location of Maximum Concentration	EPC Units	Reasonable Maximum Exposure		
							Medium EPC Value	Medium EPC Statistic [3]	Medium EPC Rationale
Metals									
Lead	mg/kg	1.50E+02	(a)	2.98E+03	B-2; 3 ftbgs (09/17/03)	mg/kg	3.37E+02	95% Chebyshev (Mean, Sd) UCL	(4)

Notes:

(1) The Kaplan-Meier estimation method for non-detects was used, as per USEPA (2013).

(2) Data Distribution (Note: data distribution calculated by ProUCL are based on detected values only):

(a) Data set is neither normally, gamma or lognormally distributed.

(b) Data set is lognormally distributed.

(c) Data set is gamma distributed.

(d) Data set is normally distributed.

(3) Statistics (Note: 95% UCL values are calculated using ProUCL software, Version 5.0. See Appendix B for full ProUCL results):

95% Chebyshev (Mean, Sd) UCL = 95% Chebyshev UCL of mean and standard deviation using the Chebyshev Inequality

(4) ProUCL recommended value is used as the EPC value. In the event of more than one recommended EPC value, the higher EPC value is used.

Table 2

Lead Risk Assessment Spreadsheet 8 for Parkland User
Former Standard Oil Station 307233
2259 First Street
Livermore, California

Input	
Medium	**Level**
Lead in Soil/Dust (µg/g)	337
Respirable Dust (µg/m^3)	1.5

Output

Percentile Estimate of Blood Pb (µg/dl)						**PRG-90**
	50th	90th	95th	98th	99th	(µg/g)
BLOOD Pb, CHILD	0.2	0.3	0.4	0.4	0.5	**1079**
BLOOD Pb, PICA CHILD	0.3	0.6	0.7	0.9	1.0	542

Exposure Parameters

	units	**children**
Days per week	days/wk	0.5
Geometric Standard Deviation	unitless	1.6
Blood lead level of concern	µg/dl	1
Skin area, residential	cm^2	2900
Soil adherence	µg/cm^2	200
Dermal uptake constant	(µg/dl)/(µg/day)	0.0001
Soil ingestion	mg/day	100
Soil ingestion, pica	mg/day	200
Ingestion constant	(µg/dl)/(µg/day)	0.16
Bioavailability	unitless	0.44
Breathing rate	m^3/day	6.8
Inhalation constant	(µg/dl)/(µg/day)	0.192

Pathways

	Typical			**With pica**		
	Pathway contribution			**Pathway contribution**		
Children	**PEF**	**µg/dl**	**percent**	**PEF**	**µg/dl**	**percent**
Soil Contact	4.1E-6	0.00	1%		0.00	0%
Soil Ingestion	5.0E-4	0.17	99%	1.0E-3	0.34	100%
Inhalation	1.4E-7	0.00	0%		0.00	0%

Sources:

(1) Agency for Toxic Substances and Disease Registry (ATSDR). 1990. ATSDR, U.S. Public Health Service; Toxicological Profile for Lead.

(2) Cal/EPA Office of Environmental Health Hazard Assessment (OEHHA). 2007. Development of Health Criteria for Schools Site Risk Assessment Pursuant to Health and Safety Code Section 901(g): Child-Specific Benchmark Change in Blood Lead Concentration for School Site Risk Assessment. (http://www.oehha.ca.gov/public_info/public/kids/schools041707.html)

(3) Chaney, R.L, H. W. Mielke, and S. B. Sterrett. 1988. Speciation, Mobility, and Bioavailability of Soil Lead; in B.E. Davies and B.G. Wixson (eds), Lead in Soil: Issues and Guidelines (Science Reviews Limited, Norwood, England) pp 105-129.

(4) US Environmental Protection Agency. May 1996. Soil Screening Guidance: Technical Background Document, EPA/540/R-95/128, Office of Solid Waste and Emergency Response, Appendix D, Table 3.

(5) Moore, M. R., P. A Meridith, W.S. Watson, D. J. Summer, M. K Taylor, and A Goldberg. 1980. The percutaneous absorption of lead-203 in humans from cosmetic preparations containing lead acetate as assessed by whole-body, counting and other techniques. Food Cosmet. Toxicol. 18: 636.

(6) Ryu, J.E., E.E. Ziegler. S.E. Nelson, and S.J. Fomon. 1983. Dietary Intake of Lead and Blood Lead Concentration in Early Infancy. Am. J. Dis. Early Child.

(7) US Environmental Protection Agency. 1986. Air Quality Criteria for Lead, EPA 600/8-83-028, June 1986, Environmental Criteria and Assessment Office.

(8) US Environmental Protection Agency. 1998. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual (Part E Supplemental Guidance for Dermal Risk Assessment) Interim Guidance.

(9) US Environmental Protection Agency. 1997. Exposure Factors Handbook EPA/600/P-95/002Fa, August, 1997, Office of Research and Development.

(10) White, P.D., P. VanLeeuwen, B.D. Davis, M. Maddaloni, K.A. Hogan, A.H. Marcus, and R.W. Elias, 1998; Environ. Health Perspect 106, Suppl. 6; 151.

Table 3

Calculations of Blood Lead Concentrations (PbBs) and Preliminary Remediation Goal (PRG) for Commercial Worker

Former Standard Oil Station 307233

2259 First Street

Livermore, California

Variable	Description of Variable	Units	Value
PbS	Soil lead concentration	µg/g or ppm	337
$R_{fetal/maternal}$	Fetal/maternal PbB ratio	--	0.9
BKSF	Biokinetic Slope Factor	µg/dL per ug/day	0.4
GSD_i	Geometric standard deviation PbB	--	1.8
PbB_0	Baseline PbB	µg/dL	0.0
IR_S	Soil ingestion rate (including soil-derived indoor dust)	g/day	0.050
$AF_{S, D}$	Absorption fraction (same for soil and dust)	--	0.12
$EF_{S, D}$	Exposure frequency (same for soil and dust)	days/yr	100
$AT_{S, D}$	Averaging time (same for soil and dust)	days/yr	365
PbB_{adult}	PbB of adult worker, geometric mean	µg/dL	0.2
$PbB_{fetal, 0.90}$	90th percentile PbB among fetuses of adult workers	µg/dL	0.4
PbB_t	Target PbB level of concern (e.g., 10 µg/dL)	µg/dL	1.0
$P(PbB_{fetal} > PbB_t)$	Probability that fetal PbB > PbB_t, assuming lognormal distribution	%	0.3%

PRG90 795

Sources:

(1) US Environmental Protection Agency. 2009a. Adult Lead Model (ALM) spreadsheet (MS Excel). http://www.epa.gov/superfund/lead/products.htm

(2) US Environmental Protection Agency. 2009b. Update of the Adult Lead Methodology's Default Baseline Blood Lead Concentration and Geometric Standard Deviation Parameter, OSWER Dir #9200.2-82. June 2009.

(3) US Environmental Protection Agency. 2003. Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil. Final (December 1996), EPA-540-R-03-001, January 2003.

(4) US Environmental Protection Agency. 1991. Risk Assessment Guidance for Superfund, Volume I: Human Health Evaluation Manual Supplemental Guidance, Standard Default Exposure Factors, OSWER Directive 9285.6-03, Interim Final, March 25, 1991.

Attachment A

Table A.1

Summary of ProUCL Output
Former Standard Oil Station 307233
2259 First Street
Livermore, California

User Selected Options	
Date/Time of Computation	10/9/2015 2:52:57 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead

General Statistics

Total Number of Observations	123	Number of Distinct Observations	120
		Number of Missing Observations	0
Minimum	3.29	Mean	150.2
Maximum	3700	Median	21
SD	475.4	Std. Error of Mean	42.86
Coefficient of Variation	3.164	Skewness	5.678

Normal GOF Test

Shapiro Wilk Test Statistic	0.338	**Shapiro Wilk GOF Test**
5% Shapiro Wilk P Value	0	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.379	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.0799	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	221.3	95% Adjusted-CLT UCL (Chen-1995)	244.2
		95% Modified-t UCL (Johnson-1978)	224.9

Gamma GOF Test

A-D Test Statistic	11.56	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.841	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.242	**Kolmogrov-Smirnoff Gamma GOF Test**
5% K-S Critical Value	0.0894	Data Not Gamma Distributed at 5% Significance Level

Data Not Gamma Distributed at 5% Significance Level

Gamma Statistics

k hat (MLE)	0.409	k star (bias corrected MLE)	0.404
Theta hat (MLE)	367.6	Theta star (bias corrected MLE)	371.7
nu hat (MLE)	100.5	nu star (bias corrected)	99.41
MLE Mean (bias corrected)	150.2	MLE Sd (bias corrected)	236.3
		Approximate Chi Square Value (0.05)	77.41
Adjusted Level of Significance	0.048	Adjusted Chi Square Value	77.18

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50))	192.9	95% Adjusted Gamma UCL (use when n<50)	193.5

Table A.1

Summary of ProUCL Output
Former Standard Oil Station 307233
2259 First Street
Livermore, California

User Selected Options	
Date/Time of Computation	10/9/2015 2:52:57 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Lead (cont.'d)

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.911	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk P Value	1.0727E-9	Data Not Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.108	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.0799	Data Not Lognormal at 5% Significance Level

Data Not Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.191	Mean of logged Data	3.408
Maximum of Logged Data	8.216	SD of logged Data	1.536

Assuming Lognormal Distribution

95% H-UCL	143.4	90% Chebyshev (MVUE) UCL	152.7
95% Chebyshev (MVUE) UCL	178.3	97.5% Chebyshev (MVUE) UCL	213.8
99% Chebyshev (MVUE) UCL	283.6		

Nonparametric Distribution Free UCL Statistics
Data do not follow a Discernible Distribution (0.05)

Nonparametric Distribution Free UCLs

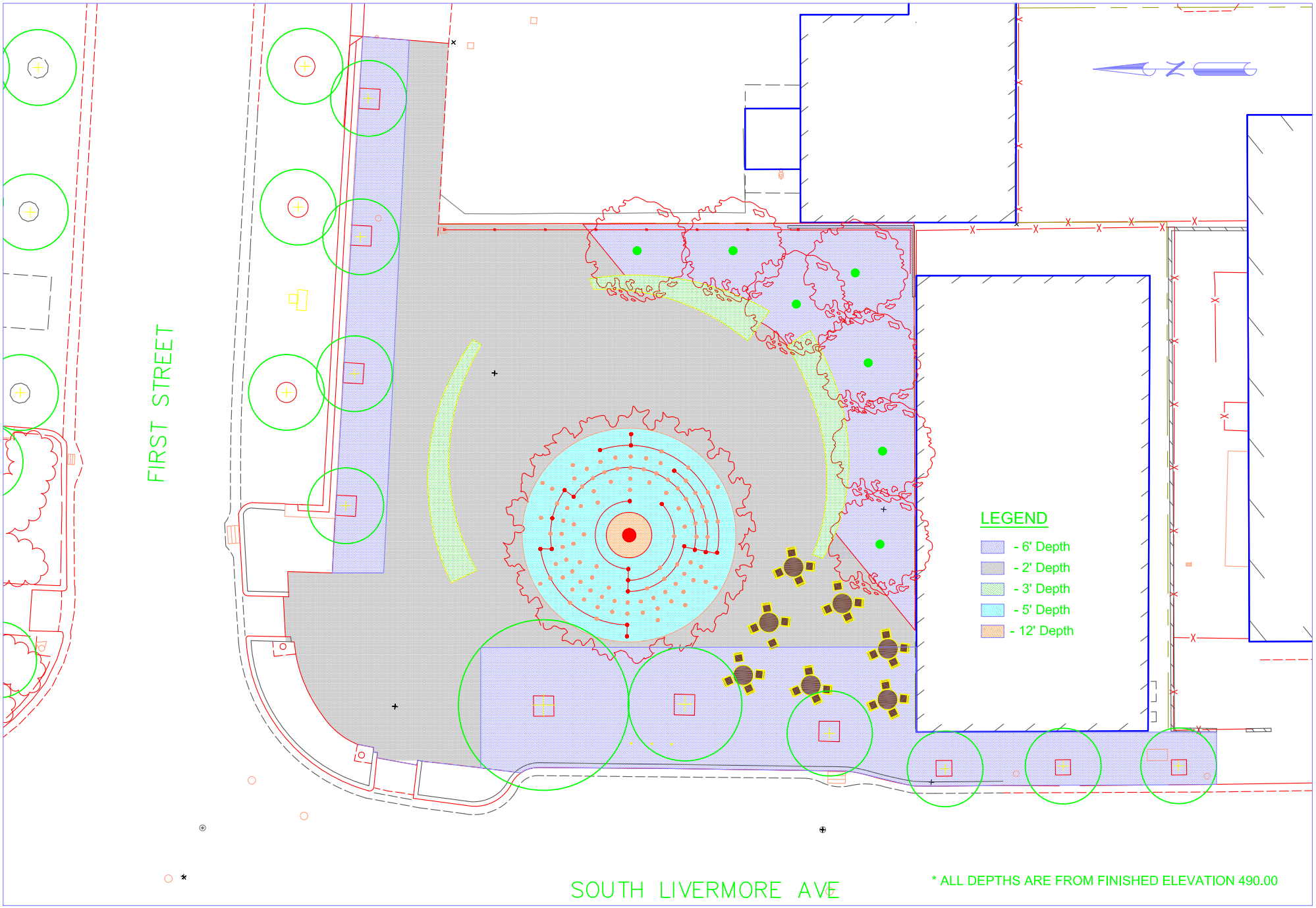
95% CLT UCL	220.7	95% Jackknife UCL	221.3
95% Standard Bootstrap UCL	221.5	95% Bootstrap-t UCL	288.9
95% Hall's Bootstrap UCL	315.8	95% Percentile Bootstrap UCL	226.8
95% BCA Bootstrap UCL	247.1		
90% Chebyshev(Mean, Sd) UCL	278.8	95% Chebyshev(Mean, Sd) UCL	337.1
97.5% Chebyshev(Mean, Sd) UCL	417.9	99% Chebyshev(Mean, Sd) UCL	576.7

Suggested UCL to Use

95% Chebyshev (Mean, Sd) UCL	337.1

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.
These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2002)
and Singh and Singh (2003). However, simulations results will not cover all Real World data sets.
For additional insight the user may want to consult a statistician.

Appendix E
Livermorium Park/Plaza Design Drawing



Inch 1 0

DRAWN BY: FY
DATE: 5/11/15

CITY OF LIVERMORE CALIFORNIA
COMMUNITY DEVELOPMENT DEPARTMENT - ENGINEERING DIVISION
City Project No. 2014-36-1

LIVERMORIUM PARK / PLAZA

EX-1
Sheet 1
Of 1
Scale: 1"=300'

Appendix F
Soil and Groundwater Management Plan

CONESTOGA-ROVERS & ASSOCIATES

10969 Trade Center Dr, Suite 107
Rancho Cordova, California 95670
Telephone: (916) 889-8900 Fax: (916) 889-8999
www.CRAworld.com

TRANSMITTAL

DATE: May 20, 2013

REFERENCE NO.: 312264

PROJECT NAME: Former Texaco 307233

TO: Mr. Jerry Wickham
ACEH
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Please find enclosed:
- ☐ Draft
- ☐ Originals
- ☐ Prints
- ☒ Final
- ☐ Other

Sent via:
- ☐ Mail
- ☐ Overnight Courier
- ☐ Same Day Courier
- ☒ Other Electronic Upload

QUANTITY	DESCRIPTION
1	Soil and Groundwater Management Plan

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
Please contact Brian Silva at (916) 889-8908 with any questions or comments.

Copy to: Ms. Carryl MacLeod, Chevron (electronic only)
Mr. Erik Uranga, City of Livermore

Completed by: Brian Silva [Please Print] Signed: 

Filing: **Correspondence File**

Carryl MacLeod
Project Manager
Marketing Business Unit

Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-6506
cmacleod@chevron.com

May 20, 2013

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Re: Former Texaco Service Station 317233
2259 First Street
Livermore, California
ACEHS Case RO2908

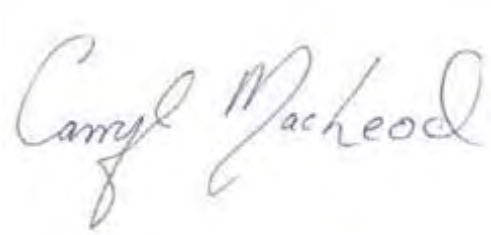
I accept the Soil and Groundwater Management Plan

I agree with the conclusions and recommendations presented in this document. The information included is accurate to the best of my knowledge, and appears to meet local agency and Regional Board guidelines. This work plan was prepared by Conestoga Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,



Carryl MacLeod
Project Manager

Attachment: Soil and Groundwater Management Plan

SOIL AND GROUNDWATER MANAGEMENT PLAN

Former Texaco Station (Chevron Site 307233)
2259 First Street
Livermore, Alameda County, CA

Prepared For:
Chevron Environment Management Company

Prepared by:
Conestoga-Rovers & Associates

10969 Trade Center Drive,
Ste 107
Rancho Cordova, California
U.S.A. 95670

Office: (916) 889-8900
Fax: (916) 889-8999

web: http:\\www.CRAworld.com

MAY 2013
REF. NO. 312264 (24)
This report is printed on recycled paper.

SOIL AND GROUNDWATER MANAGEMENT PLAN

Former Texaco Station (Chevron Site 307233)
2259 First Street
Livermore, Alameda County, CA

Brian Silva

Prepared by:
Conestoga-Rovers & Associates

10969 Trade Center Drive,
Ste 107
Rancho Cordova, California
U.S.A. 95670

Office: (916) 889-8900
Fax: (916) 889-8999

web: http:\\www.CRAworld.com

MAY 2013
REF. NO. 312264 (24)
This report is printed on recycled paper.

TABLE OF CONTENTS

LIST OF FIGURES
(Following Text)

LIST OF APPENDICES

1.0 INTRODUCTION

Conestoga-Rovers and Associates (CRA) prepared this soil and groundwater management plan (SGMP) at the request of Chevron Environmental Management Company (CEMC) for the Former Texaco Station (Chevron Site 307233) site (the Site) in Livermore, Alameda County, California. This Site may contain lead affected soil or groundwater associated with the Texaco Station in operation from pre-1929 to 1973 (Affected Soil and Groundwater respectively). This SGMP provides information about CEMC's environmental assessment of the Site and outlines the process for working with CEMC to address Affected Soil and/or Affected Groundwater related to excavation or dewatering activities necessary for current, on-site construction activities. A contact sheet is provided as Appendix A.

2.0 SITE CONDITIONS

2.1 SITE DESCRIPTION

The Site is located in City of Livermore in Alameda County, California, at the intersection of First Street and Livermore Avenue (Figures 1 and 2). The Site is located on Assessor's Parcel Number (APN) 097 -0110-005-03 and is owned by the City of Livermore (Figure 2).

2.2 ENVIRONMENTAL INVESTIGATION SUMMARY

Environmental assessment and remediation has been ongoing since 2003 beginning with an investigation initiated by the City of Livermore Engineering Division to assess soil and groundwater conditions prior to further development to the park. To date, 31 soil borings, 6 soil vapor probes and 12 wells have been installed. In 2005, one orphaned underground storage tank (UST) was removed and in 2007, two orphaned USTs and associated product piping were removed. The primary contaminants of concern at the site are lead, total petroleum hydrocarbons as motor oil (TPHmo), total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as gasoline (TPHg), and benzene. Alameda County Environmental Health has required that a soil management plan be prepared to address shallow lead contamination in the event of future redevelopment of the park. The locations of site monitoring wells, soil borings, and former USTs are presented on Figure 2.

3.0 ROLES AND RESPONSIBILITIES

This section outlines the process for requesting CEMC's assistance identifying and managing Affected Soil and/or Affected Groundwater.

3.1 NOTIFICATION

CEMC requests that the City of Livermore, or the current property owner(s), provide CEMC with advance notice of plans to conduct construction activities that may encounter Affected Soil and/or Affected Groundwater, if possible. If potentially affected soil and/or groundwater is observed during necessary construction activities, and a CEMC-authorized representative is not on site, CEMC should be notified as early as possible to allow CEMC to profile the material and provide consultation on the eventual disposal or reuse of any Affected Soil and discharge or disposal of any Affected Groundwater. CEMC may be reached at (800) 338-5434.

3.2 PROFILING AND MANAGEMENT

This SGMP was prepared as requested by the Alameda County Environmental Health (ACEH).

After receiving notification that potentially affected soil and/or groundwater has been observed during Site construction activities, CEMC will arrange for a representative to collect samples of the soil and/or groundwater (either in situ or from a segregated[1] stockpile) for profiling purposes.

If, based on a review of the profiling results, ACEH prohibits excavated Affected Soil from being reused on the Site due to the presence of lead or petroleum hydrocarbons, CEMC will coordinate with the City of Livermore regarding the proper off-Site disposal of that excavated soil. The City of Livermore or the current property owner(s) should ensure that any excavated Affected Soil is stockpiled in a separate location from non-affected to allow for proper soil management and disposal.

[1] If Site soils are being excavated, the property owner should ensure that potentially affected soil is stockpiled in a separate location from non-affected soil to allow for proper soil profiling and management.

Figures

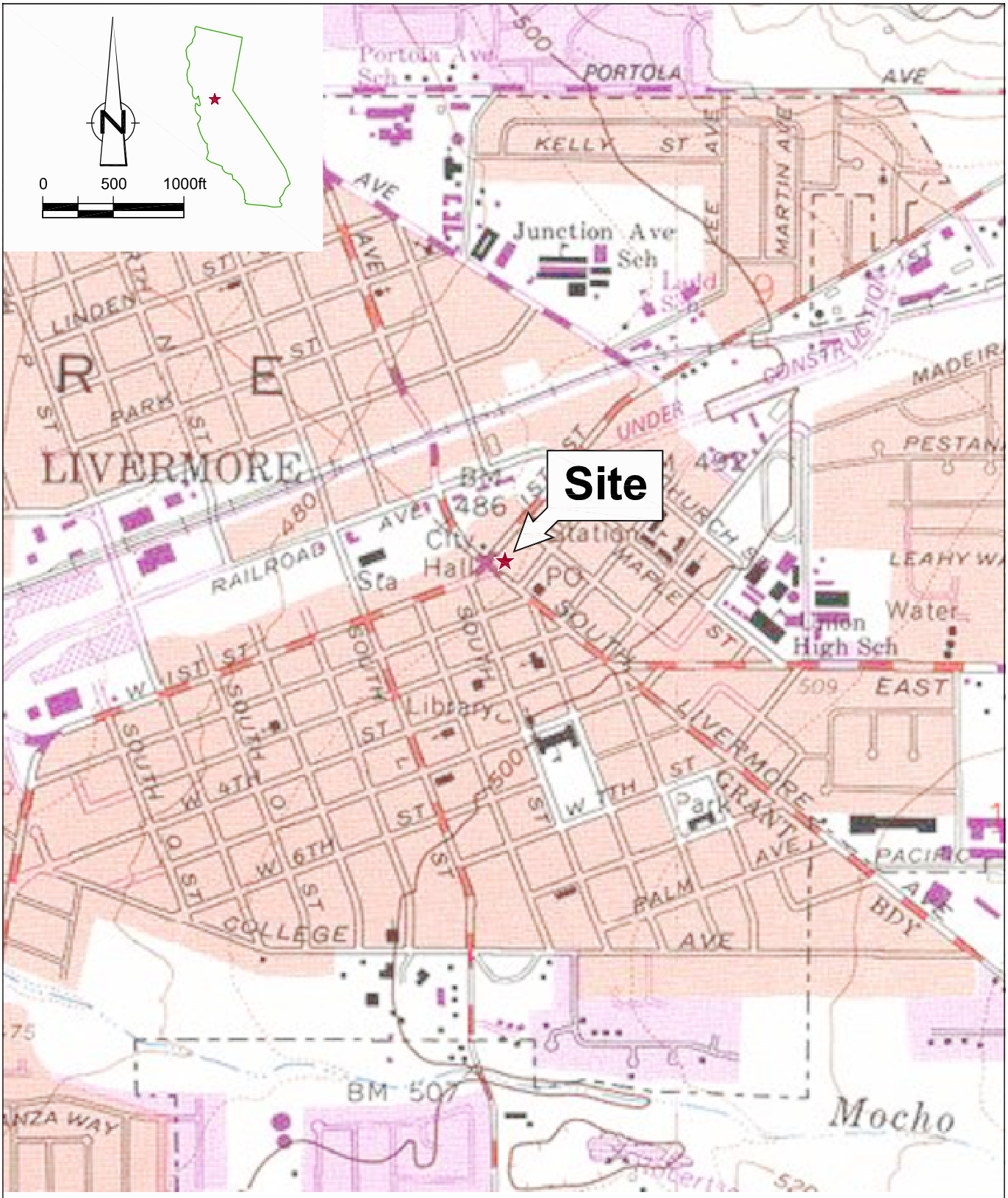


Figure 1

VICINITY MAP
FORMER TEXACO STATION (CHEVRON SITE 307233)
2259 FIRST STREET
Livermore, California

312264-95(023)GN-EM001 FEB 15/2013

FIRST STREET

LIVERMORE AVENUE

CPT4

CPT5

MW-2

MW-3

MW-4

MW-5

MW-6

MW-7

MW-8

MW-9

MW-10

MW-11

MW-12

CPT1

CPT2

CPT3

SB1

SB2

SB3

SB4

SB5

SB6

SB7

SB8

SB9

SB10

SB11

SB12

SB13

B1

B2

B3

SSB1

SSB2

SSB3

SSB4

SSB5

SSB6

SSB7

SSB8

SSB9

SSB10

SSB11

VP1

VP2

VP3

BRICK

BRICK

PLANTER

PLANTER

PLANTER

BENCH (TYP.)

CANOPY

FORMER DISPENSER ISLANDS

FORMER STATION BUILDING

BUILDING

PEETS COFFEE

UTILITY VAULTS

FORMER USTS (REMOVED 2007)

FORMER UST (REMOVED 2005)

N

0 10 20ft

0°
90°
180°
270°

HISTORICAL SHALLOW GROUNDWATER FLOW DIRECTION 2Q2010 THROUGH 2012

HISTORICAL DEEP GROUNDWATER FLOW DIRECTION 2Q2010 THROUGH 2012

LEGEND

- DEEP MONITORING WELL LOCATION
- SHALLOW MONITORING WELL LOCATION
- CPT BORING LOCATION
- SOIL BORING LOCATION
- SOIL BORING LOCATION (FURGRO 2003)
- VAPOR PROBE LOCATION
- SHALLOW SOIL SAMPLE LOCATION

Figure 2

SITE PLAN
FORMER TEXACO STATION 307233
2259 FIRST STREET
Livermore, California

312264-2012(018)GN-EM002 MAY 24/2012

Appendix A:
Contact Sheet

APPENDIX A:
CONTACT SHEET

Chevron Environmental Management Company

Chevron Environmental Management Company Project Manager
P.O. Box 6012
San Ramon, California 94583-0712
(925) 842-1000

Consultant

Conestoga-Rovers and Associates
10969 Trade Center Drive, Suite 107
Rancho Cordova, California 95670
916-889-8900

Owners/Contacts

City of Livermore
Community Development Department
Attn: Eric Uranga
1052 South Livermore Avenue
Livermore, California 94550
925-960-4584

City of Livermore
Community Development Department
Attn: Debbie Salgado
1052 South Livermore Avenue
Livermore, California 94550
925-960-4584

Regulatory Oversight

Alameda County Environmental Health
Attn: Jerry Wickham
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577
510-567-6700

Regional Water Quality Control Board
Attn: Cherie McCaulou
1515 Clay Street, Suite 1400
Oakland, California 94612
510-622-2300

Appendix G
Low-Threat Closure Request

Appendix G
Low-Threat Closure Evaluation
Former Standard Oil Station 307233
2259 First Street, Livermore, California

PURPOSE OF THE LOW-THREAT UNDERGROUND STORAGE TANK CASE CLOSURE POLICY

On August 17, 2012, the SWRCB adopted the policy via Resolution 2012-0016. The intent of the policy is to increase cleanup process efficiency at petroleum release sites. A benefit of improved efficiency is the preservation of limited resources for mitigation of releases posing the greatest threat to human and environmental health. Per the policy, sites that meet the specified general and media-specific criteria pose a low threat to human health, safety, and the environment and are appropriate for case closure pursuant to Health and Safety Code section 25296.10. The policy further states that those sites that meet the criteria for low-threat closure do not require further corrective action and shall be issued a uniform closure letter. The general and media-specific criteria are described below.

GENERAL CRITERIA

The eight general criteria that must be satisfied by all candidate sites, and the site-specific evaluation for each of these criteria, are presented below.

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

Satisfied: Water for the site and surrounding vicinity is provided by the City of Livermore who obtains surface water from the State Water Project in the Sacramento-San Joaquin Delta and groundwater wells in Pleasanton, which are located greater than 1,000 feet from the site.

b) *The unauthorized release consists only of petroleum*.

Satisfied: The unauthorized release at the site has been characterized as a release of petroleum-based products (gasoline and related constituents).

c) The unauthorized ("primary") release from the UST system has been stopped.

Satisfied: The former service station and associated pumps were removed from the site in 1973. In 2005 an orphan UST was encountered and removed beneath the sidewalk on the southwest corner of the site. In 2007 two 750-gallon single-wall steel gasoline USTs and approximately 27 feet of associated piping were removed from the site.

d) *Free product has been removed to the maximum extent practicable*.

Satisfied: Only trace amounts of light non-aqueous phase liquid (LNAPL) are intermittently observed in well MW-7, typically when water levels are at their lowest. LNAPL was last

observed in MW-7 (0.02 ft) in March 2015. LNAPL had previously not been observed in MW-7 since August 2011.

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

Satisfied: The elements of a conceptual site model (CSM) have been previously presented in CRA's *Subsurface Investigation Report* submitted on March 5, 2009, and *Draft Corrective Action Plan* submitted on May 3, 2011, Well Installation Report submitted on May 8, 2012, and *Human Health Risk Assessment for Lead* submitted on June 21, 2012.

f) *Secondary source has been removed to the extent practicable.*

Satisfied: The former service station and associated pumps were removed from the site in 1973. In 2005 an orphan UST was encountered and removed beneath the sidewalk on the southwest corner of the site. In 2007 two 750-gallon single-wall steel gasoline USTs and approximately 27 feet of associated piping were removed from the site.

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

Satisfied: Samples collected during subsurface investigations have been analyzed for MTBE, and reported in accordance with Health and Safety Code section 25296.15.

h) *Nuisance as defined by Water Code section 13050 does not exist at the site.*

Satisfied: Conditions defined as a "nuisance" in Water Code section 13050 do not exist at the site.

MEDIA-SPECIFIC CRITERIA

Impacts to human health and the environment can occur due to releases from USTs through contact with contaminated media (groundwater, surface water, soil, and soil vapor) via various exposure pathways. In the policy, the most common exposure scenarios have been combined into three media-specific criteria:

1. Groundwater
2. Vapor Intrusion to Indoor Air
3. Direct Contact and Outdoor Air Exposure

Groundwater

It is a fundamental tenet of the policy that if the closure criteria described in the policy are satisfied at an unauthorized petroleum release site, attaining background water quality is not feasible, and applicable water quality objectives (WQOs) will be attained through natural attenuation within a reasonable amount of time, prior to the expected need for use of any affected groundwater. If a site has groundwater with a designated beneficial use that is

affected by an unauthorized release, to satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds WQOs must be stable or decreasing in aerial extent, and meet all of the additional characteristics of one of the five classes of sites listed in the policy:

Satisfied: The site satisfies the characteristics of Class 2.

a. The contaminant plume that exceeds WQOs is less than 250 feet in length. The plume appears to be confined to the site boundaries. Impacted groundwater is defined by downgradient offsite shallow zoned well MW-9, and deep zoned well MW-1. Additionally, offsite soil boring SB-13 (downgradient of the shallow zone wells) was advanced to further delineate petroleum hydrocarbons in the shallow water-bearing zone. Similar to the onsite shallow wells, a zone of alternating fines and gravel was encountered from 22 fbg to 30 fbg. The layers of fines were no thicker than 2 inches and some, but not all, of the fine layers were wet. A temporary well was set and left in the open borehole to allow groundwater to accumulate; however, no groundwater was noted in the borehole after waiting for approximately one hour. It should be noted that several of the onsite shallow wells have recently gone dry, likely due to the ongoing drought, indicating that first encountered groundwater is limited. In-lieu of a groundwater sample, a soil sample was collected from the bottom of the borehole and analyzed for petroleum hydrocarbons. Results were below detection limits for all analytes.

b. There is no free product. Only trace amounts of light non-aqueous phase liquid (LNAPL) are intermittently observed in well MW-7, typically when water levels are at their lowest. LNAPL was last observed in MW-7 (0.02 ft) in March 2015. LNAPL had previously not been observed in MW-7 since August 2011.

c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary. The closest identified wells are located approximately 2,075 feet from the site (Appendix F1).

d. The dissolved concentration of benzene is less than 3,000 micrograms per liter (μg/L) and the dissolved concentration of MTBE is less than 1,000 μg/L. Benzene was last detected at a maximum concentration of 18 μg/L on September 24, 2015. Dissolved phase MTBE has not been reported.

Petroleum Vapor Intrusion to Indoor Air

The low-threat vapor intrusion criteria described below apply to sites where the release originated and impacted or potentially impacted adjacent parcels or (2) buildings for human occupancy are reasonably expected to be constructed when: (1) existing buildings are occupied or may be reasonably expected to be occupied in the future, on the future.

Petroleum release sites will satisfy the media-specific screening criteria for petroleum vapor intrusion if:

a. Site-specific conditions at the release site satisfy all of the characteristics and criteria of scenarios 1 through 3 as applicable, or all of the characteristics and criteria of scenario 4 as applicable; or,

b. A site-specific risk assessment for vapor intrusion is conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency; or,

c. The regulatory agency determines there is no significant risk of adversely affecting human health through the use of institutional or engineering controls.

Petroleum release sites shall satisfy the media-specific criteria for petroleum vapor intrusion to indoor air and be considered low-threat for the vapor intrusion to indoor air pathway if any of the above criteria are met.

Satisfied: A site-specific risk assessment for vapor intrusion was conducted and demonstrated that human health is not at risk (CRA, *Subsurface Investigation Report*, March 5, 2009). Additionally, the site satisfies the characteristics of Scenario 4B of criteria (a).

- Please see the table below comparing LTC criteria for direct soil gas with a bioattenuation zone.

Soil Gas Criteria ($\mu g/m^3$)			
	With Bioattenuation Zone*		
Constituent	***Residential***	***Commercial***	***Highest Detected Concentration***
Benzene	<85,000	<280,000	<3.2
Ethylbenzene	<1,100,000	<3,600,000	9.7
Naphthalene	<93,000	<310,000	<21
$\mu g/m^3$ = Micrograms per cubic meter			

*Bioattentuation zone = total TPH <100 mg/kg in upper 5' of soil, and ≥4 percent oxygen in soil at 5 ft sample depth; a 1,000-fold bioattenuation of petroleum vapors is assumed for the zone.

Direct Contact and Outdoor Air Exposure

The policy describes conditions where direct contact with contaminated soil or inhalation of contaminants volatized to outdoor air poses an insignificant threat to human health. Release sites where human exposure may occur satisfy media-specific criteria for direct contact and outdoor air exposure and shall be considered low-threat if they meet any one of the following:

a. Maximum concentrations of petroleum constituents in soil are less than or equal to those listed in the table below for the specified depth below ground surface. The limits from 0 to 5 feet below grade (fbg) protect from ingestion, dermal contact, and outdoor inhalation of volatile and particulate emissions. The 5 to 10 fbg limits protect from inhalation of volatile emissions only; the ingestion and dermal contact pathways are not considered significant.

In addition, if exposure to construction workers or utility trench workers is reasonably anticipated, the concentration limits for Utility Worker shall also be satisfied.

	Policy Criteria					***Site Data***	
	Residential		***Commercial/Industrial***		***Utility Worker***	***Maximum Site Concentration***	
Constituent	***0–5 fbg (mg/kg)***	***Volatilization to outdoor air 5–10 fbg (mg/kg)***	***0–5 fbg (mg/kg)***	***Volatilization to outdoor air 5–10 fbg (mg/kg)***	***0–10 fbg (mg/kg)***	***0–5 fbg (mg/kg)***	***5–10 fbg (mg/kg)***
Benzene	1.9	2.8	8.2	12	14	<0.0005	<0.0005
Ethylbenzene	21	32	89	134	314	<0.001	<0.001
Naphthalene	9.7	9.7	45	45	219	ND	ND
PAH*	0.063	NA	0.68	NA	4.5	NA	NA

* Based on the seven carcinogenic polycyclic aromatic hydrocarbons (PAHs) as benzo(a)pyrene toxicity equivalent [BaPe]. The PAH screening level is only applicable where soil is affected by either waste oil and/or Bunker C fuel.
NA = not applicable
ND = not detected

b. Maximum concentrations of petroleum constituents in soil are less than levels that a site-specific risk assessment demonstrates will have no significant risk of adversely affecting human health.

c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, the regulatory agency determines that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health.

Satisfied: The site meets criteria (a) above for residential and commercial policy criteria. The site is currently zoned as commercial/industrial (city park) and will remain this way for the foreseeable future.

Site Name: Former Standard Oil Station 307233
Site Address: 2259 First Street, Livermore, CA

Site meets the criteria of the Low-Threat Underground Storage Tank (UST) Case Closure Policy as described below.[1]

General Criteria General criteria that must be satisfied by all candidate sites: **Is the unauthorized release located within the service area of a public water system?** **Does the unauthorized release consist only of petroleum?** **Has the unauthorized ("primary") release from the UST system been stopped?** **Has free product been removed to the maximum extent practicable?** **Has a conceptual site model that assesses the nature, extent, and mobility of the release been developed?** **Has secondary source been removed to the extent practicable?** **Has soil or groundwater been tested for MTBE and results reported in accordance with Health and Safety Code Section 25296.15?** **Does nuisance as defined by Water Code section 13050 exist at the site?** **Are there unique site attributes or site-specific conditions that demonstrably increase the risk associated with residual petroleum constituents?**	☒Yes ☐ No ☒ Yes ☐ No ☒ Yes ☐ No ☒ Yes ☐ No ☐ NA ☒ Yes ☐ No ☒ Yes ☐ No ☒ Yes ☐ No ☒ Yes ☐ No ☐ Yes ☒ No
Media-Specific Criteria Candidate sites must satisfy all three of these media-specific criteria: **1. Groundwater:** To satisfy the media-specific criteria for groundwater, the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites: **Is the contaminant plume that exceeds water quality objectives stable or decreasing in areal extent?** **Does the contaminant plume that exceeds water quality objectives meet all of the additional characteristics of one of the five classes of sites?** If YES, check applicable class: ☐ **1** ☒ **2** ☐ **3** ☐ **4** ☐ **5**	☒ Yes ☐ No ☐ NA ☒ Yes ☐ No ☐ NA

[1] Refer to the Low-Threat Underground Storage Tank Case Closure Policy for closure criteria for low-threat petroleum UST sites.

For sites with releases that have not affected groundwater, do mobile constituents (leachate, vapors, or light non-aqueous phase liquids) contain sufficient mobile constituents to cause groundwater to exceed the groundwater criteria?	☐ Yes ☐ No ☒ NA
2. Petroleum Vapor Intrusion to Indoor Air: The site is considered low-threat for vapor intrusion to indoor air if site-specific conditions satisfy all of the characteristics of one of the three classes of sites (a through c) or if the exception for active commercial fueling facilities applies. **Is the site an active commercial petroleum fueling facility?** Exception: Satisfaction of 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. **a. Do site-specific conditions at the release site satisfy all of the applicable characteristics and criteria of scenarios 1 through 3 or all of the applicable characteristics and criteria of scenario 4?** If YES, check applicable scenarios: ☐ **1** ☐ **2** ☒ **3** ☐ **4** **b. Has a site-specific risk assessment for the vapor intrusion pathway been conducted and demonstrates that human health is protected to the satisfaction of the regulatory agency?** **c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that petroleum vapors migrating from soil or groundwater will have no significant risk of adversely affecting human health?**	☐ Yes ☒ No ☒Yes ☐ No ☐ NA ☒ Yes ☐ No ☐ NA ☐ Yes ☐ No ☒ NA
3. Direct Contact and Outdoor Air Exposure: The site is considered low-threat for direct contact and outdoor air exposure if site-specific conditions satisfy one of the three classes of sites (a through c). **a. Are maximum concentrations of petroleum constituents in soil less than or equal to those listed in Table 1 for the specified depth below ground surface (bgs)?** **b. Are maximum concentrations of petroleum constituents in soil less than levels that a site specific risk assessment demonstrates will have no significant risk of adversely affecting human health?** **c. As a result of controlling exposure through the use of mitigation measures or through the use of institutional or engineering controls, has the regulatory agency determined that the concentrations of petroleum constituents in soil will have no significant risk of adversely affecting human health?**	☒ Yes ☐ No ☐ NA ☒ Yes ☐ No ☐ NA ☐ Yes ☐ No ☒ NA

Appendix G1
Zone 7 Water Agency Well Location Map

	ZONE 7 WATER AGENCY **100 NORTH CANYONS PARKWAY** **LIVERMORE, CA 94551**	**WELL LOCATION MAP**	**SCALE: 1"= 800 ft** **DATE: 9/4/09** **2259 First Street**

Hull, Ian

From: Hong, Wyman [WHong@zone7water.com]
Sent: Friday, September 04, 2009 2:37 PM
To: Hull, Ian
Subject: 2259 First St
Attachments: 2259 First St.pdf

Ian,

Attached is the well location map of the area (1/2 mile radius) near 2259 First Street in Livermore you requested for you contamination study.

LEGEND
Blue triangle – water supply well
Yellow cross – abandoned well
Red diamond – monitoring well
All open symbols – destroyed well

Wyman Hong
Water Resources Specialist
Zone 7 Water Agency
100 North Canyons Parkway
Livermore, CA 94551
Phone: (925) 454-5056
Mobile: (925) 998-2350