Carryl MacLeod
Project Manager, Marketing Business Unit

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

Re: Livermorium Plaza – Mills Square Park
2259 First Street
Livermore, CA
ACEH Site Cleanup Case #RO03255

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached *Remedial Action Plan – Lead* submitted on my behalf to SWRCB's GeoTracker website.

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: *Remedial Action Plan – Lead*

Chevron Environmental Management Company
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CarrylMacLeod@chevron.com

ARCADIS Design & Consultancy for natural and built assets

Chevron Environmental Management Company

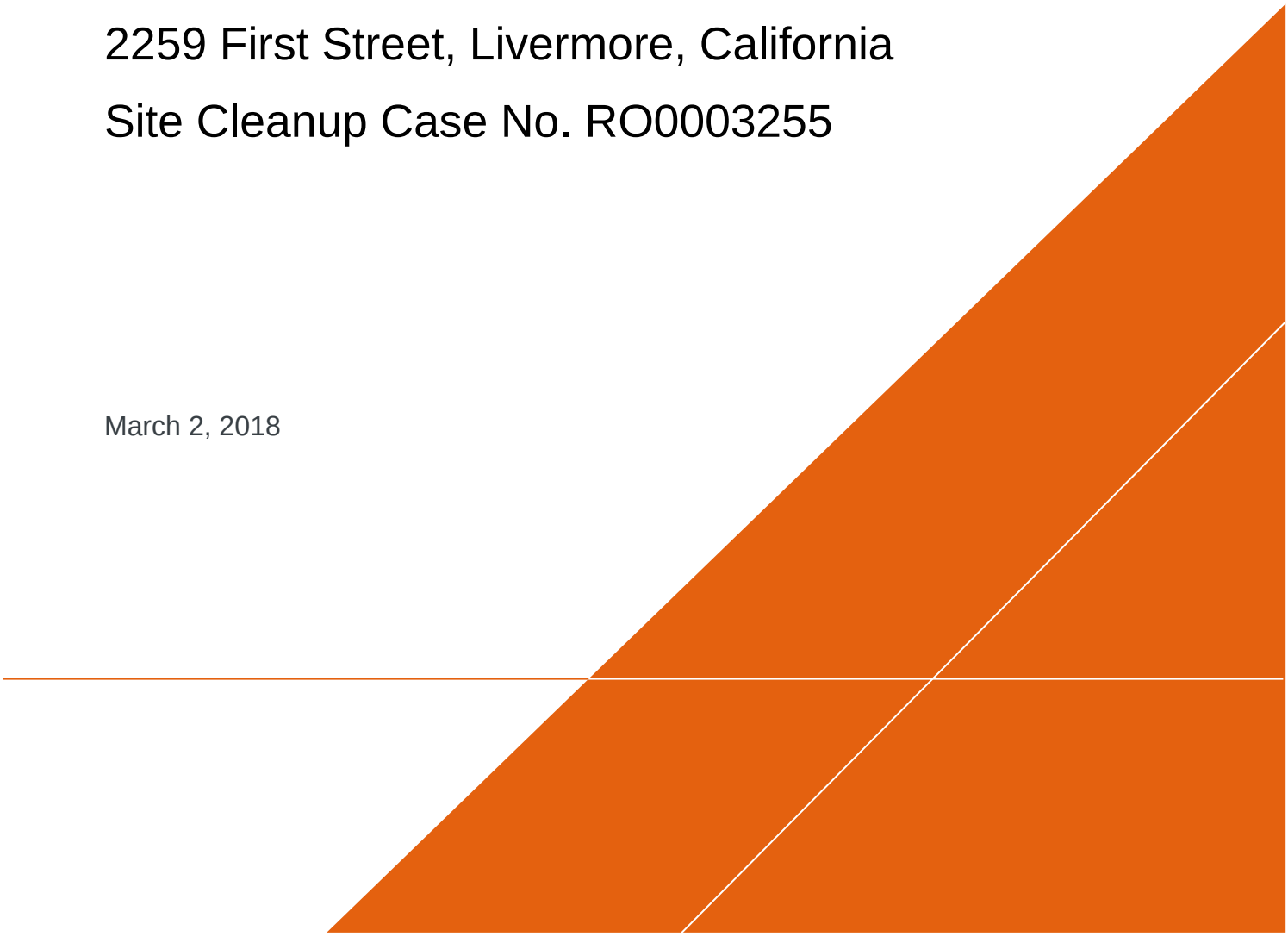
REMEDIAL ACTION PLAN - LEAD

Livermorium Plaza – Mills Square Park Redevelopment

2259 First Street, Livermore, California

Site Cleanup Case No. RO0003255

March 2, 2018



307233 REMEDIAL ACTION PLAN - LEAD

Livermorium Plaza – Mills Square Park Redevelopment
2259 First Street
Livermore, California

Colleen Taggart
Environmental Engineer

J.P. Brandenburg
Project Geologist

Katherine Szymanowski
Principal Geologist

Prepared for:

Chevron Environmental Management Company

Prepared by:

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Suite 300
San Francisco
California 94104
Tel 415 374 2744

Our Ref.:

B0307233.2018

Date:

March 2, 2018

CONTENTS

FIGURES

APPENDICES

ACRONYMS AND ABBREVIATIONS

ACDEH	Alameda County Department of Environmental Health
Arcadis	Arcadis U.S., Inc.
bgs	below ground surface
Chevron	Chevron U.S.A. Inc.
COC	constituent of concern
ESL	Environmental Screening Level
IRAP	Interim Remedial Action Plan
mg/kg	milligrams per kilogram
µg/m^3	micrograms per cubic meter
RA1	Remedial Alternative 1
RA2	Remedial Alternative 2
RA3	Remedial Alternative 3
UST	Underground Storage Tank
XRF	X-Ray Fluorescence device

1 INTRODUCTION

On behalf of Chevron Environmental Management Company (CEMC) Arcadis U.S., Inc. (Arcadis) prepared this Remedial Action Plan (RAP) for lead-impacted soils to evaluate active remedial alternatives and propose a remedial path forward for the Livermorium Plaza – Mills Square Park Redevelopment, 2259 First Street, Livermore, California (the site; Figure 1). Figure 1 shows the general area of the site. Figure 2 shows a site plan for the property. In its January 31, 2018 directive letter to the City of Livermore (CITY) and CEMC, Alameda County Department of Environmental Health (ACDEH) requested submission of a remedial action plan for remediation of lead impacted soil (Appendix A). CEMC is unaware of whether the City will submit a remedial action plan; this remedial action plan is submitted on behalf of CEMC. Based upon the requirements outlined in ACDEH's Directive (Appendix A), this RAP proposes remediation of soil where concentrations of lead exceed the environmental screening level (ESL) of 80 milligrams per kilogram (mg/kg).

1.1 Report Organization

This RAP is organized into the following sections:

- *Section 2 – Site Description and Features.* Provides a brief description of site background information, site history and previous investigations and remediation activities.
- *Section 3 – Soil Vapor.* Discusses soil vapor sampling to evaluate vapor intrusion risk to the adjacent Peet's Coffee building.
- *Section 4 – Exposure Pathway Assessment*. Discusses the potential transport and release mechanisms and receptors at the site.
- *Section 5 – Development of Remedial Options.* Discusses the development of remedial alternatives for lead impacted soil.
- *Section 6 – Analysis of Remedial Alternatives.* Summarizes the analysis and evaluation of each remedial alternative.
- *Section 7 – Comparative Analysis of Remedial Alternatives.* Presents a comparative analysis of remedial alternatives.
- *Section 8 – Selected Remedy.* Presents the selected remedy.
- *Section 9 – References*. Lists the references cited throughout this RAP. References included in attached tables and figures are not repeated in this section.

2 SITE DESCRIPTION AND FEATURES

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 of GHD 2016). 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 of GHD 2016) that the source of the lead impacts at the property was "unknown to Fugro," but "likely related to fill material at the Site". Thus, it is likely that lead-impacted fill was imported to the property and/or spread across the property after the City acquired it.

2.1 Site Geology and Hydrogeology

The site is approximately 485 feet above mean sea level. 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 ground surface (ft bgs). 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 ft bgs. Silt and clay are encountered between approximately 9 and 45 ft bgs, and sand and gravel are predominately encountered from approximately 45 ft bgs to the total depth explored of 62 ft bgs.

A network of 12 onsite and offsite wells monitor groundwater in two water-bearing zones identified below the site; Zone A at approximately 28 to 40 ft bgs and Zone B at approximately 55 ft bgs. 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. Groundwater in shallow Zone A ranges from approximately 25 to 37 ft bgs and flows toward the southwest. Groundwater in deeper Zone B is confined, ranges from approximately 27 to 38 ft bgs, and flows toward the northwest.

2.2 Site History

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, 2 single depth soil vapor probes, and 12 wells have been installed. In 2005, one orphaned underground storage tank (UST) was removed. 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 of GHD's Interim Remedial Action Plan (IRAP) (GHD 2016). The locations of all known monitoring wells, soil borings, and former USTs are presented on Figure 2.

Former UST locations and associated park renovation excavations are shown on Figure 3. Figures regarding the extent of residual lead concentrations in soil remaining after the City's planned excavation associated with the park renovation as well as cross sections showing the extent of lead concentrations can be found in GHD's IRAP (GHD 2016).

On [7/17/2017] ACDEH proposed to regulate the UST petroleum release case and the lead release site under two different regulatory oversight programs. Subsequently the City of Livermore and CEMC each entered into a Voluntary Remedial Action Agreement with ACDEH with regard to the lead case, which is designated Site Cleanup Case No. RO0003255. Based upon the requirements outlined in ACDEH's

Directive (Appendix A), this RAP proposes remediation of soil where concentrations of lead exceed the environmental screening level (ESL) of 80 milligrams per kilogram (mg/kg).

3 SOIL VAPOR[1]

Soil vapor probe installations and sampling were conducted by GHD on January 30 and February 2, 2018. Two vapor probes (VP-4 and VP-5) were installed at 6 feet and 8 inches and 4 feet and 2 inches bgs, respectively. VP-4 is located near the southeast border of the site next to the adjacent building (Peet's Coffee), and VP-5 is located on the sidewalk directly in front of the adjacent building. Soil vapor samples were collected from the two installed vapor probes and an additional sample was collected from VP-1, an existing soil vapor probe located on the south corner of the site above the removed USTs. Soil vapor analytical results indicated that COC vapor concentrations at all 3 sample locations were below detection limits with the exception of VP-5 which had a toluene concentration of 9.3 µg/m^3. As this is orders of magnitude lower than the RWQCB Environmental Screening Level for toluene (1.6E+5 µg/m^3 for residential sub-slab scenario), no vapor intrusion risk to the Peet's Coffee Building is indicated.

4 EXPOSURE PATHWAY ASSESSMENT

The site is a park located in the central downtown portion of Livermore. It is Arcadis' understanding that the City of Livermore plans to renovate the existing park and landscaping, although no final design drawings or construction schedules have been provided.

Potential onsite receptors may be exposed to lead in surface and subsurface soils by direct contact. In general, routes of exposure by direct contact include incidental ingestion of soil, dermal contact with soil, and inhalation of constituents adhered onto dust particles that have been released by wind erosion into ambient (outdoor) air.

During park renovations, construction workers performing the excavation are the receptors at the greatest risk of exposure to lead. Lead has been detected at depths of 0.5 feet bgs at HA-8 to approximately 9 feet bgs (Appendix C).

The properties immediately surrounding the site are commercial and industrial. Currently, potential offsite receptors include commercial workers. These receptors could potentially be exposed should dust particles be released from the site during redevelopment activities.

Based upon historical soil analytical data, there have been no lead detections deeper than 9 feet bgs onsite, therefore there is little to no risk of leaching of lead from soil to groundwater beneath the site by percolation based upon lithology and depth of groundwater zones.

Since the site is an existing park and is going to be excavated for future park renovations, there is no anticipated impact to an ecological habitat. As mentioned above, the park is located in the downtown

[1] Soil vapors are associated with the petroleum case (Case No. RO0002908). However, ACDEH's January 31, 201 directive letter required that the remedial action report for the lead case provide a summary of "soil vapor sampling data collected to evaluate vapor intrusion risk to the adjacent Peet's Coffee Building."

portion of Livermore. Since there is no evidence of lead leaching into the groundwater, it is reasonable to conclude that impacted groundwater has not migrated to sensitive receptors in the area.

Under current conditions, there are no complete lead exposure pathways to users of the park. Following completion of the park renovation and removal of the lead-impacted soil (Section 4), it can be concluded that there will be no complete exposure pathways for lead exposure of on-site workers or off-site receptors (dust during redevelopment) in the future.

5 DEVELOPMENT OF REMEDIAL OPTIONS FOR LEAD IMPACTED SOIL

5.1 Remedial Alternative 1 (RA1)– Excavation and Placement of Geotextile Marker

Based upon ACDEH's directive letter (Appendix A) and Figure 2 of GHD's IRAP (GHD 2016), soil would be excavated to the expected ground disturbance depth for the park renovation originally proposed. In non-hardscaped areas, the excavation extents would be completed to a minimum depth of 3 feet bgs. Any soil remaining with lead concentrations above the ESL for residential direct exposure human health risk level of 80 mg/kg would be left in place. A high-visibility geotextile fabric mesh would be placed at the bottom of the excavated area indicating that concentrations of lead in soil exceed the screening level below the geotextile fabric.

5.2 Remedial Alternative 2 (RA2) – Focused Soil Excavation

Similar to RA1, soil would be excavated based upon the expected ground disturbance depth for the park renovation. In addition to this excavation, Arcadis recommends a focused approach on the indicated areas in Figure 4 by the solid red rectangles which identify soil to be removed to a depth of 4.5 feet bgs and the dashed red rectangles identify soil to be removed to a depth of 9.5 feet bgs. The highlighted soil boring locations indicate lead concentrations above the 80 mg/kg screening level (Appendix C). Using the historic analytical soil data provided by GHD, it was determined the lead results above screening levels in the solid red rectangles are only found in depths ranging from 0.5 ft to 4 ft bgs; lead results above screening levels in the dashed red rectangles range from 4.5ft to 9 ft bgs. Arcadis has selected the modified excavation areas to remove all soil above the 80 mg/kg screening level and allow more efficient removal of soil with an excavator. This approach would eliminate the requirement of a geotextile mesh because the all the lead-impacted soil would be removed. The total amount of soil to be removed from the focused excavation areas alone will be approximately 1,155 cubic yards (1,733 tons).

5.3 Remedial Alternative 3 (RA3) – Mass Soil Excavation

Based upon ACDEH's directive letter (Appendix A), it was noted that the City of Livermore has requested excavation extents be advanced to 7.5 feet bgs across the entire site irrespective of lead concentrations. This alternative also includes focused excavation to 9.5 feet bgs in a limited area (red rectangles in Figure 4).

6 ANALYSIS OF REMEDIAL ALTERNATIVES

6.1 Remedy Selection Factors

This section describes and evaluates the five remedial alternatives identified in Section 5. Each remedial alternative is evaluated by assessing the following five remedy selection factors:

- Effectiveness
- Long-term reliability
- Ability to Implement
- Implementation risk
- Cost

6.1.1 Effectiveness

Each remedial action alternative is assessed for its short-term and long-term effectiveness in achieving site cleanup goals by considering the following criteria, as appropriate:

- Magnitude of risk from untreated waste or treatment residuals remaining at the site with onsite management and controls to mitigate exposure through various exposure pathways. The characteristics of the residuals will be considered to the degree that they remain hazardous, considering their volume, toxicity, mobility, propensity to bioaccumulate, and propensity to degrade.

- Required level of engineering and institutional controls necessary to manage the risk posed from treatment residuals and untreated hazardous substances remaining at the site.

- For areas requiring remedial action, the ability of the remedial action to restore or protect beneficial uses of site groundwater.

- Adequacy of treatment technologies in meeting treatment objectives. Time required to achieve the remedial action objectives.

- Any other information relevant to effectiveness.

6.1.2 Long-Term Reliability

Each remedial action alternative is assessed for its long-term reliability by considering the following criteria, as appropriate:

- Reliability of treatment technologies in meeting treatment objectives.

- Reliability of engineering and institutional controls necessary to manage the risk from treatment residuals and untreated hazardous substances.

- Characteristics of the hazardous substance to be managed and the effectiveness and enforceability through time of engineering and institutional controls in preventing migration of constituents and in managing risks associated with potential exposure.

- Nature, degree, and certainties or uncertainties of any long-term management as related to ease of operation (e.g., O&M).

- Any other information relevant to long-term reliability.

6.1.3 Ability to Implement

Each remedial alternative is assessed for the ease or difficulty of implementing the remedial action, by considering the following criteria, as appropriate:

- Constructability as related to practical, technical, and legal difficulties and unknowns associated with the implementation of a technology, engineering control, or institutional control.

- Ability to monitor the short- and long-term effectiveness of the remedy.

- Consistency with federal, state, and local requirements; activities needed to coordinate with other agencies; and ability and time required to obtain any necessary authorization from other governmental bodies.

- Availability of necessary services, materials, equipment, and specialists, including the availability of adequate offsite treatment, storage, and disposal capacity and services, and availability of prospective technologies.

- Any other information relevant to implementation.

6.1.4 Implementation Risk

Each remedial action alternative is assessed for the risk associated with implementing the remedial action, by considering the following criteria, as appropriate:

- Potential impacts to the community during implementation of the remedial action and the effectiveness and reliability of protective or preventative measures.

- Potential impacts to workers during implementation of the remedial action and the effectiveness and reliability of protective or preventative measures.

- Potential impacts to the environment during implementation of the remedial action and the effectiveness and reliability of protective or preventative measures.

- Time until the remedial action is complete.

6.1.5 Cost

Each remedial action alternative is assessed based on its life cycle cost by considering the following costs for each phase of the implementation, as appropriate:

- Site assessment.
- Design and permitting.
- Implementation and/or installation.
- Operation and monitoring.
- Decommissioning and site closure.

6.2 Remedial Alternative Evaluation

6.2.1 Remedial Alternative 1 – Excavation and Placement of Geotextile Marker

RA1 will not focus on removing the entirety of the lead-impacted soil onsite. Due to the minimal amount of excavation that RA1 requires, it would be the simplest to implement. The only excavation to be performed would be for the renovation of the park detailed in Figure 3.

6.2.1.1 Effectiveness

RA1 would be completely effective at removing all lead impacted soil outlined in the City of Livermore's expected ground disturbance for park renovation excavation plans (Figure 3). Some portions of the site with lead above the 80 mg/kg screening level up to 9 feet bgs would remain, but would be inaccessible to future park users. These areas would be below the geotextile mesh, which is a visual marker to inform the maximum allowed depth of future unrestricted excavation.

6.2.1.2 Long-Term Reliability

Because the topmost lead-impacted soil would be removed. RA1 would be highly reliable in eliminating a direct exposure pathway to park users.

6.2.1.3 Ability to Implement

RA1 is easily implementable as it is already part of the City of Livermore's plans to renovate the park. The geotextile marker fabric would be the only additional factor to include.

6.2.1.4 Implementation Risk

RA1 would leave concentrations of lead above 80 mg/kg in soil 3 to 9 feet below ground surface and thus require recordation of a land use covenant (LUC) (Appendix A). There is also the risk of exposure to the lead-impacted soil during implementation to construction workers removing the soil. This risk will be consistent for all 3 alternatives.

6.2.1.5 Cost

The cost associated with RA1 mainly depends on how much soil is excavated with the added cost of the geotextile marker, and disposal costs. Using the cost estimation from the GHD IRAP (GHD 2016), excavation costs range from $75 to $100 per ton of soil. RA1 will require removal of approximately 1,400 cubic yards (approximately 2,100 tons) of soil at an approximate cost of $210,000.

6.2.2 Remedial Alternative 2 – Focused Soil Excavation

RA2 supplements RA1 by the addition of focused excavations to address all locations onsite where lead concentrations in soil have been above the screening level of 80 mg/kg.

6.2.2.1 Effectiveness

RA2 would be completely effective at removing all soil with lead concentrations above the screening level of 80 mg/kg. Effectiveness could be improved with the use of a portable X-Ray fluorescence (XRF) device to confirm the final extents of the soil removal to ensure that all lead-impacted soil is removed.

6.2.2.2 Long-Term Reliability

Since all lead-impacted soil above 80 mg/kg would be removed from the site, RA2 is highly reliable.

6.2.2.3 Ability to Implement

RA2 is also easily implementable as part of the planned renovation excavation. There will be additional excavation areas for the focused sections that remove the deeper lead-impacted soil. These areas were made to be rectangular to make it easier for an excavator to remove the soil.

6.2.2.4 Implementation Risk

The primary risk for RA2 would be construction workers being potentially exposed to lead-impacted soil during excavation activities.

6.2.2.5 Cost

The cost associated with RA2 mainly depends on how much soil is excavated and disposal costs. The proposed renovations will require removal of approximately 1,400 cubic yards and the focused excavation areas (approximately 3,133 tons) of soil which will cost approximately $313,300.

6.2.3 Remedial Alternative 3 – Mass Soil Excavation

RA3 is based upon the very conservative approach proposed by the City of Livermore to advance the excavation to 7.5 feet across the entire site, with additional focused excavation areas to 9.5.

6.2.3.1 Effectiveness

RA3 would be completely effective at removing all soil with lead concentrations above screening levels. Effectiveness could be improved with the use of a portable X-Ray fluorescence device to confirm the final extents of the soil removal to ensure that all lead-impacted soil is removed.

6.2.3.2 Long-Term Reliability

Since all lead-impacted soil above 80 mg/kg would be removed from the site, RA3 is highly reliable.

6.2.3.3 Ability to Implement

RA3 is implementable, however to complete the full excavation would be very time consuming due to the greater depth of the excavation. The additional excavation areas for the focused sections that remove the deeper lead-impacted soil will also add more time to the schedule.

6.2.3.4 Implementation Risk

A deeper excavation across the entire site poses a serious risk to the foundation below the Peet's Coffee building on the southeast side. Without support provided to the foundation of the building and soil below it, the integrity of the concrete slab below the building could be compromised. Additionally, RA3 would still have the risk for construction workers being potentially exposed to lead-impacted soil during excavation activities.

6.2.3.5 Cost

The cost would be the highest for RA3 due to the amount of soil that will need to be removed and then properly disposed of. The 7.5 foot deep site-wide excavation will require removal of approximately 3,361 cubic yards and the focused excavation areas (approximately 5,042 tons) of soil which will cost approximately $504,200.

7 COMPARATIVE ANALYSIS OF REMEDIAL ALTERNATIVES

Remedial Alternative	Excavation and Placement of Geotextile Marker	Focused Soil Excavation	Maximum Soil Excavation
Effectiveness	Moderate	Good	Good
Long Term Reliability	Moderate	Good	Good
Ability to Implement	Good	Good	Poor
Implementation Risk	Low Risk	Moderate Risk	High Risk
Excavation Cost	$210,000	$313,300	$504,200
Recommended Alternative	--	X	--

8 SELECTED REMEDY

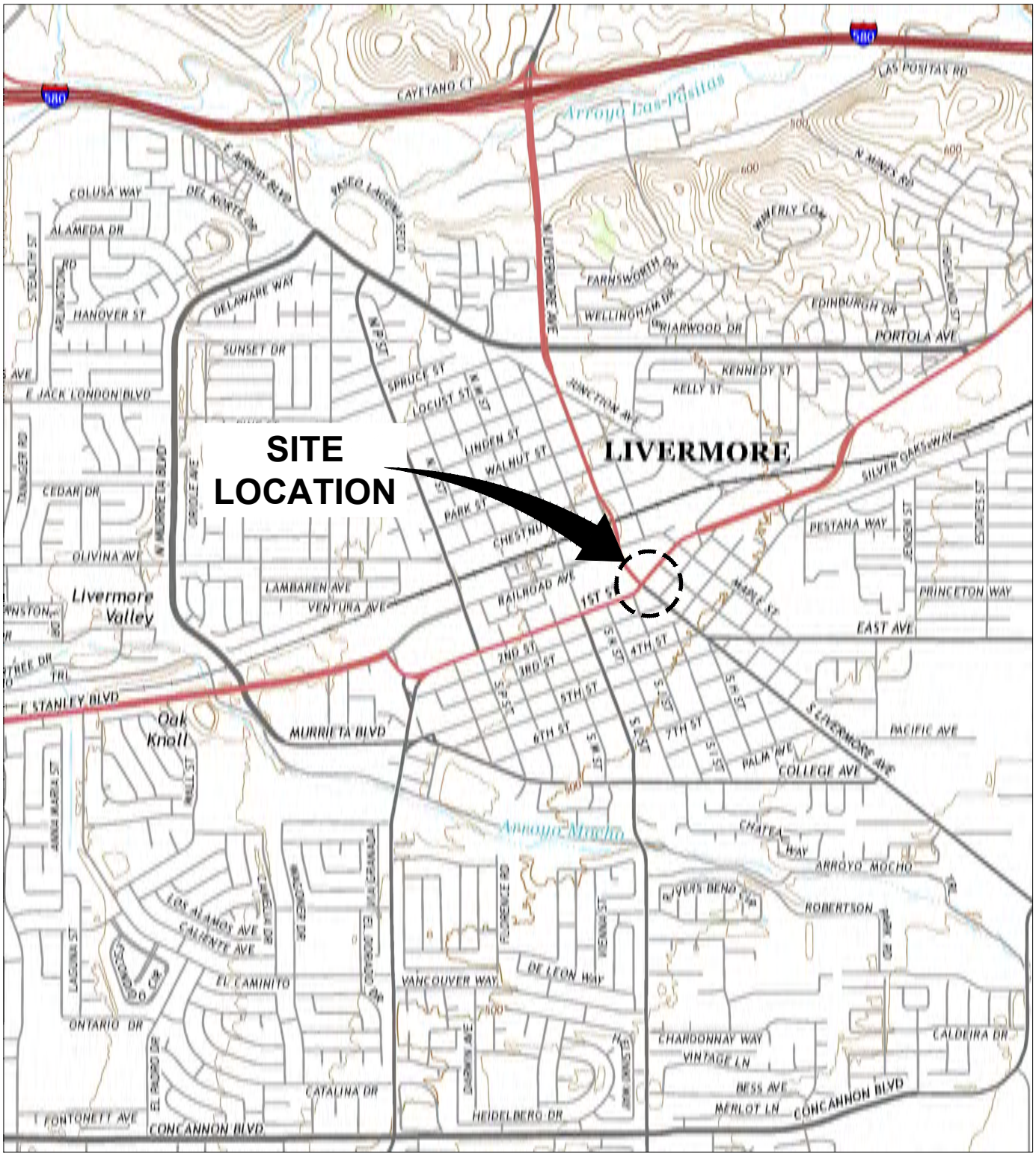
Based upon the analysis in Section 7, Arcadis is recommending RA2 (Focused Soil Excavation), to be implemented as part of park redevelopment. The focused excavation approach aims to remove all soil with concentrations above the screening level of 80 mg/kg. By doing so, this remedial alternative will eliminate the need for a LUC (Appendix A). RA2 also decreases overall costs by removing smaller sections of soil that have historically shown higher concentrations of lead. Costs can be further reduced in the field with the use of a portable XRF device which can be used to delineate the extent of the lead impact. Once the extent is delineated and all the impacted soil is removed, further monitoring is no longer necessary. Excavated soil would be disposed of at an appropriately permitted disposal facility and not reused on or offsite. To pre-profile soil to meet disposal facility requirements, one 4-point composite sample will be collected per 500 cubic yards of soil within the excavation area. If ACDEH concurs with the conclusions and recommendations in this RAP, a Remedial Implementation Plan should be prepared detailing the finalized excavation figures, tasks for implementation, scheduling, and data collection.

9 REFERENCES

GHD. 2016. Revised Interim Remedial Action Plan, Chevron Service Station 307233, 2259 First Street, Livermore, California 94550. January 14.

San Francisco Bay Regional Water Quality Control Board (RWQCB) Environmental Screening Levels, Interim-Final, February 2016. https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.html

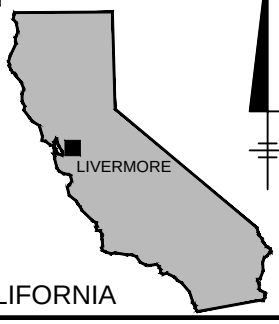
FIGURES



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., LIVERMORE, CALIFORNIA, 2015.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.



FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
LIVERMORE, CALIFORNIA

SITE LOCATION MAP

ARCADIS Design & Consultancy for natural and built assets

FIGURE 1

CITY: SAN RAFAEL, CA DV/GROUP: ENVCAD DB: J. HARRIS
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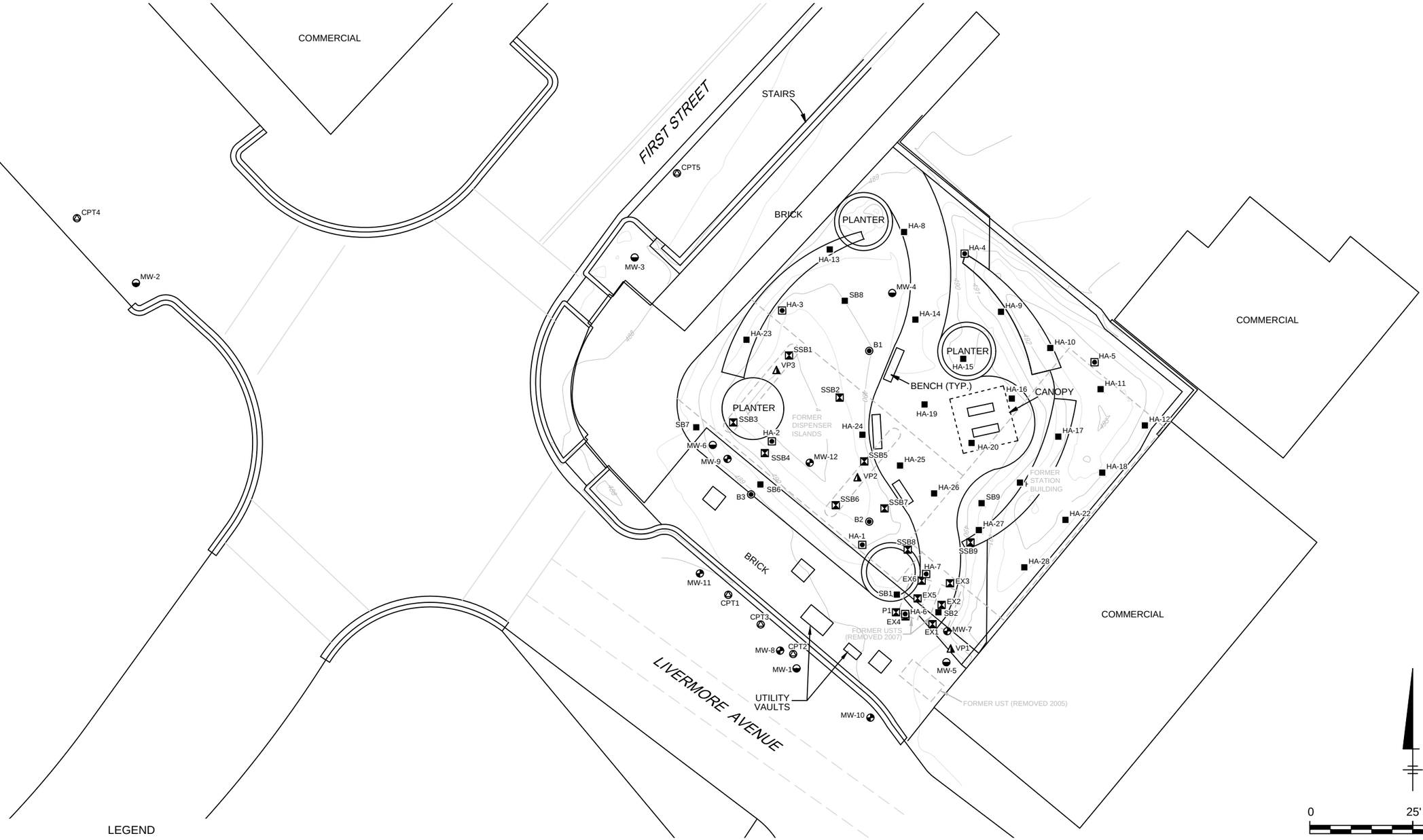
Livermore 2015.jpg



LEGEND

- SHALLOW GROUNDWATER MONITORING WELL
- DEEP GROUNDWATER MONITORING WELL
- SOIL BORING
- SOIL BORING (FUGRO 2003)
- VAPOR PROBE
- SHALLOW SOIL SAMPLE
- TOTAL LEAD SOIL SAMPLE
- CPT SAMPLE
- 490 ELEVATION CONTOUR

NOTE:

1. BASE MAP PROVIDED BY GHD, DATED 11/18/2015. CITED MAP SOURCE: CITY OF LIVERMORE, CA., COMMUNITY DEVELOPMENT - ENGINEERING DIVISION, CITY PROJECT No.2014-36-1.

FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
LIVERMORE, CALIFORNIA

SITE PLAN

ARCADIS Design & Consultancy for natural and built assets

FIGURE 2

CITY: SAN RAFAEL, CA DIV/GROUP: ENVCAD DB: J. HARRIS
C:\Users\jjharris\OneDrive - ARCADIS\BIM 360 Docs\CHEVRON CORPORATION\NCA_307233\2018\B0307233.2018901-DWG\307233 - Fig 2 - Site Plain-Comprehensive.dwg LAYOUT: 2 SAVED: 2/15/2018 11:28 AM ACADVER: 20.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB
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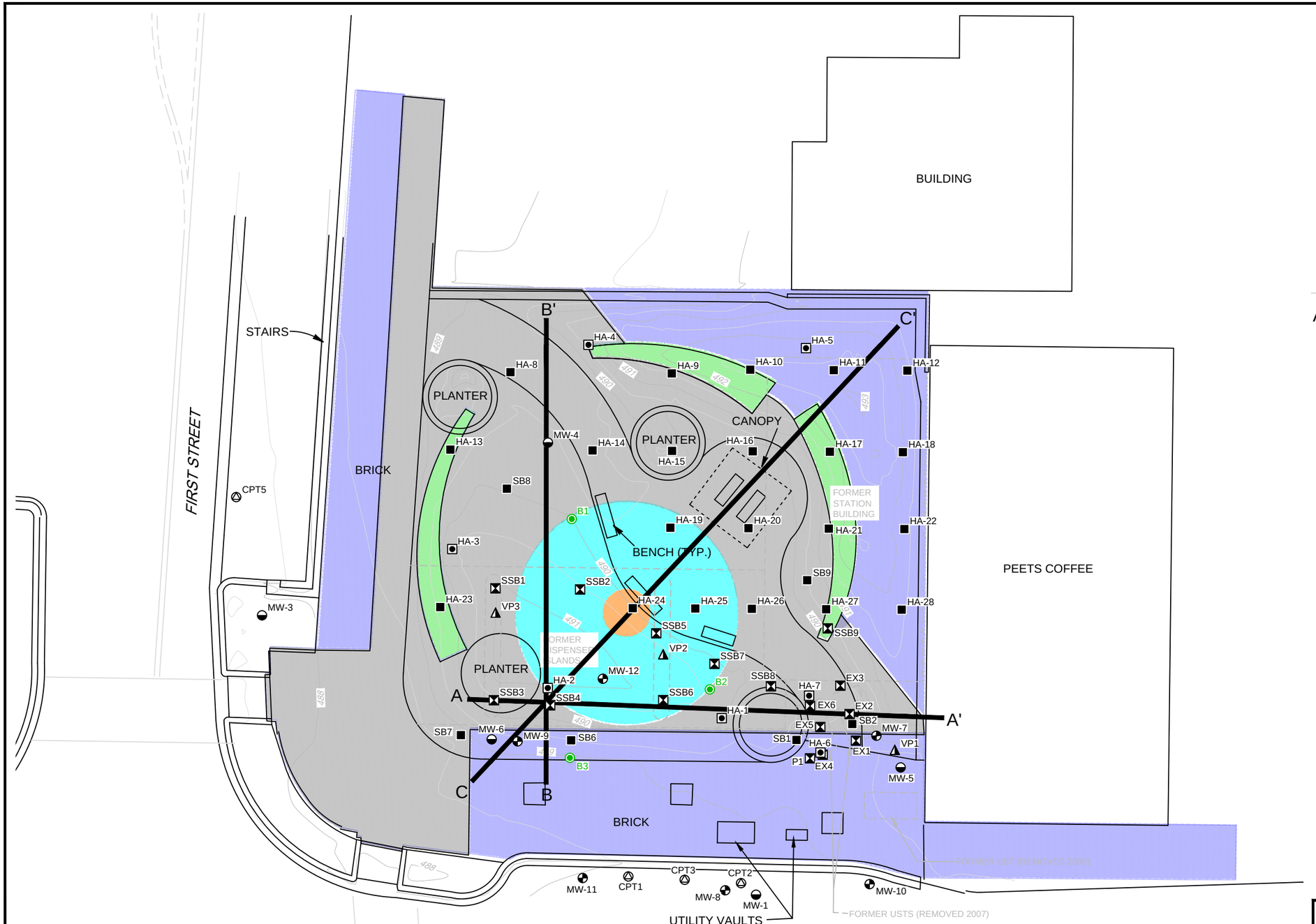

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- SHALLOW GROUNDWATER MONITORING WELL
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- VAPOR PROBE
- SHALLOW SOIL SAMPLE
- TOTAL LEAD SOIL SAMPLE
- CPT SAMPLE
- 490 ELEVATION CONTOUR
- A — A' PROFILE LOCATION

EXPECTED GROUND DISTURBANCE DEPTH FOR PARK RENOVATION :

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

NOTES:

1. BASE MAP PROVIDED BY GHD, DATED 11/18/2015. CITED MAP SOURCE: CITY OF LIVERMORE, CA., COMMUNITY DEVELOPMENT - ENGINEERING DIVISION, CITY PROJECT No.2014-36-1.
2. GROUND DISTURBANCE DEPTHS LISTED ABOVE ARE FROM ASSUMED FINISHED PARK ELEVATION OF 490.00'.

0 20' 40'

GRAPHIC SCALE

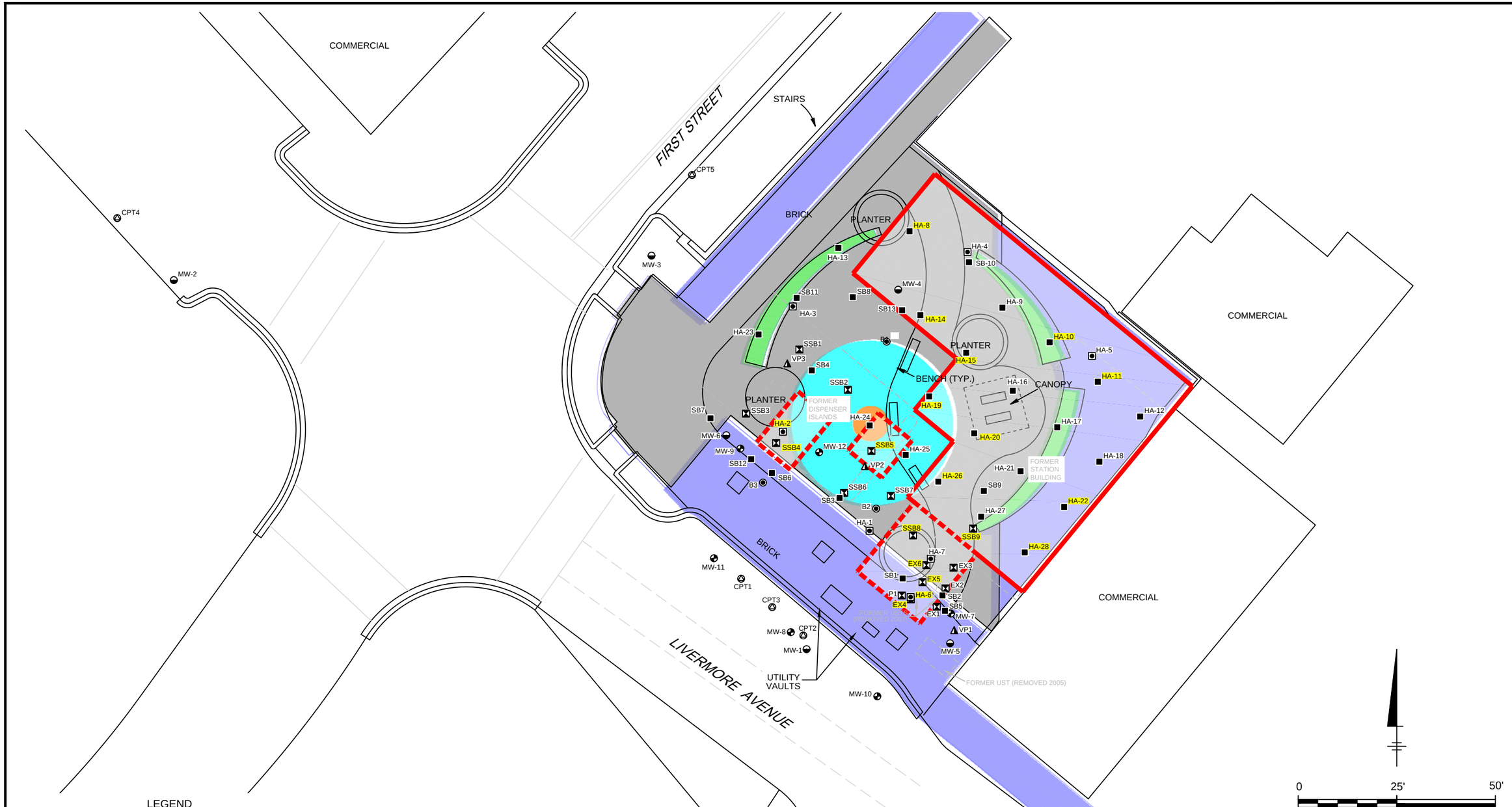
FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
LIVERMORE, CALIFORNIA

PLANNED PARK RENOVATION EXCAVATION

ARCADIS Design & Consultancy for natural and built assets

FIGURE 3

CITY: SAN RAFAEL, CA DIV/GROUP: ENVCAD DB: J. HARRIS
C:\Users\jharris\OneDrive - ARCADIS\BIM 360 Docs\CHEVRON CORPORATION\CA_307233\2018\B0307233.2018\01-DWG\307233 - Fig 2 - Site Plan.dwg LAYOUT: 2 SAVED: 2/1/2018 9:37 AM ACADVER: 20.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 2/1/2018 10:44 AM BY: HARRIS, JESS



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- CPT SAMPLE
- 490 ELEVATION CONTOUR (FEET)

BORING LOCATION WITH HISTORIC LEAD CONCENTRATION GREATER THAN 80 MILLIGRAMS PER KILOGRAM (mg/kg)

EXPECTED GROUND DISTURBANCE DEPTH FOR PARK RENOVATION :

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

PROPOSED SOIL EXCAVATION :

- 4.5' DEPTH
- 9.5' DEPTH

NOTES:

1. BASE MAP PROVIDED BY GHD, DATED 11/18/2015. CITED MAP SOURCE: CITY OF LIVERMORE, CA., COMMUNITY DEVELOPMENT - ENGINEERING DIVISION, CITY PROJECT No.2014-36-1.
2. GROUND DISTURBANCE DEPTHS LISTED ARE FROM ASSUMED FINISHED PARK ELEVATION OF 490.00'.

FORMER STANDARD OIL STATION 307233
2259 FIRST STREET
LIVERMORE, CALIFORNIA

PROPOSED SOIL EXCAVATION

ARCADIS Design & Consultancy for natural and built assets

FIGURE 4

CITY: SAN RAFAEL, CA DIV/GROUP: ENVCAD DB: J. HARRIS
C:\Users\jharris\OneDrive - ARCADIS\BIM 360 Docs\CHEVRON CORPORATION\NCA_307233\2018\B0307233.2018\01-DWG\307233 - Fig 4 - Proposed Soil Excavation.dwg LAYOUT: 4 SAVED: 2/19/2018 8:36 AM ACADVER: 20.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB
PLOTTED: 2/19/2018 9:06 AM BY: HARRIS, JESS

APPENDIX A

ACDEH Directive January 31, 2018

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
COLLEEN CHAWLA, Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
OFFICE OF THE DIRECTOR
1131 HARBOR BAY PARKWAY
ALAMEDA, CA 94502
(510) 567-6777
FAX (510) 337-9135

January 31, 2018

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: Site Cleanup Case No. RO0003255 and GeoTracker Global ID T10000010536, Livermorium Plaza – Mills Square Park Redevelopment, 2259 1st Street, Livermore, CA 94550

Dear Ms. MacLeod and Mr. Uranga:

Alameda County Department of Environmental Health (ACDEH) is providing oversight of the investigation and cleanup of the subject site under two regulatory oversight programs. Regulatory oversight for the investigation and cleanup of unauthorized releases of petroleum hydrocarbons associated with former commercial petroleum fueling facilities at the site is being provided under the State Water Resources Control Board Petroleum Underground Storage Tank (UST) Cleanup Program (Fuel Leak Case No. RO0002908). Regulatory oversight of the investigation and cleanup of lead impacted soil is being provided under Alameda County's Voluntary Remedial Action Program (Site Cleanup Program Case No. RO0003255).

Over the last several months, a series of meetings (listed below) have been held with representatives from ACDEH, the City of Livermore, and CEMC to determine a path forward for soil and groundwater remediation at the site in conjunction with the City's planned redevelopment of the site as the Livermorium Plaza.

- November 30, 2018 meeting with ACDEH, the City of Livermore, and CEMC;
- January 10, 2018 meeting with ACDEH and CEMC; and
- January 17, 2018 teleconference call with ACDEH and the City of Livermore.

Based on ACDEH's file review, and conversations held during the above listed meetings, ACDEH requests that you address the Technical Comments provided below, submit the requested reports and conduct the work by the associated compliance dates. The compliance dates have been developed based on a mutually agreed upon schedule that will facilitate coordination of remedial activities with the City's park renovation project.

TECHNICAL COMMENTS

1. **Remedial Action Plan (RAP)** - Please submit a RAP for remediation of lead impacted soil that includes the following minimum information:

    - Proposed cleanup goals and the basis for cleanup goals;
    - Summary of site characterization data including soil vapor sampling data collected to evaluate vapor intrusion risk to the adjacent Peet's Coffee building;
    - Receptor information including likely future land use scenarios, adjacent land use and sensitive receptors, and potential groundwater receptors;
    - Evaluation of a minimum of three active remedial alternatives including discussion of feasibility, cost effectiveness, estimated time to reach cleanup goals, and limitations for each remedial alternative;
    - Detailed description of proposed remediation including confirmation sampling and monitoring during implementation;
    - Post-remediation monitoring; and
    - Schedule for implementation of cleanup.

    The RAP must include excavation of lead impacted soil from the site to achieve sub-grade depth for the planned park renovation including but not limited to utilities, hardscaping, footings (for artwork and benches), and landscaping. The RAP must include placement of a geotextile marker layer at the base of the excavation where concentrations in lead are above the ESL for residential direct exposure human health risk levels of 80 milligrams per kilogram. In non-hardscaped areas (e.g., landscaped areas, etc.) the excavation extents must be completed to a minimum depth of 3 feet below ground surface (bgs). The RAP must include sufficient detail on the vertical and lateral excavation extents of lead impacted soil to incorporate into the City's bid process for the excavation work. As agreed to during the above listed meetings, the excavation extents must also be revised over those presented in the previously submitted Revised Interim Remedial Action Plan prepared by GHD dated January 14, 2016 to present a more constructible excavation plan.

    ACDEH notes that the City of Livermore has requested excavation extents to a minimum of 7.5 feet bgs while CEMC has requested that the excavation extents be determined in the RAP. The RAP must propose excavation extents that will be protective of human health direct contact exposure to impacted soil. Residual contamination left at the site should not be at concentrations that require construction workers to have Hazardous Waste Operations and Emergency Response (HAZWOPER) certification unless agreed upon by all parties.

    ACDEH notes that regulatory oversight for the investigation and cleanup of petroleum hydrocarbon contamination in soil and groundwater is being provided under the State Water Resources Control Board Petroleum UST Cleanup Program (Fuel Leak Case No. RO0002908). As discussed in the above listed meetings, the RAP will include proposed remedial actions for both petroleum hydrocarbon impacted soil and groundwater and lead impacted soil to conducted during park renovations.

    In the event the park redevelopment does not occur, a Remedial Action Plan will still be required to remediate petroleum hydrocarbon and lead impacted soil and petroleum hydrocarbon impacted groundwater to mitigate the risk to human health and the environment under the current site configuration. ACDEH notes that a Land Use Covenant will be required to be recorded if residual

contamination is left at the site above February 2016 San Francisco Bay Regional Water Quality Control Board's Environmental Screening Level (ESLs) for unrestricted use for the applicable media.

Public participation is a requirement for the RAP process, therefore, the RAP must present sufficient detail to inform the community of proposed remedial measures. ACDEH will notify potentially affected members of the public who live or own property in the surrounding area of the proposed remediation described in the RAP. Public comments on the proposed remediation will be accepted for a 30-day period.

2. **Construction Soil and Groundwater Management Plan (Construction SGMP)** – Please submit a Construction SGMP describing procedures to be followed by environmental consultants, construction contractors and workers, and other property owner representatives during property improvements, identifying safety and training requirements for construction workers, establishing procedures for assessing and managing contaminated. We request that you use ACDEH's Construction SGMP template which will be provided to you electronically.

3. **Soil Import Management Plan (SIMP)** - Please submit a SIMP presenting criteria required to evaluate the environmental conditions of proposed import borrow sites; the environmental sampling and analysis required to characterized the soil to be imported form proposed import borrow sites; proposed site-specific screening levels to be referenced for accepting the soil proposed to be imported; and the documentation to be submitted to ACDEH for timely review and approval of proposed soil to be imported.

4. **Baseline Project Schedule** - Please submit a Baseline Project Schedule incorporating the following stakeholder agreed upon dates:

March 2, 2018	RAP Submittal
March 9, 2018	Start of Public Participation Period
April 11, 2018	Project Status Meeting
April 9, 2018	End of Public Participation Period
April 30, 2018	ACDEH RAP Approval
April 30, 2018	Submittal of Construction SGMP and SIMP
May 18, 2018	ACDEH Approval of Construction SGMP and SIMP
May 30, 2018	Livermorium Plaza Ceremony
June 1, 2018	Start of Remediation

The Baseline Project Schedule must be updated and submitted to ACDEH throughout the project.

TECHNICAL REPORT REQUEST

Please upload technical reports to the State Water Resources Control Board's GeoTracker website according to the following schedule and file-naming convention:

- **March 2, 2018** – Remedial Action Plan
  File to be named: RAP_R_yyyy-mm-dd RO2908_RO3255

- **April 30, 2018** – Construction Soil and Groundwater Management Plan
  File to be named: RAP_R_yyyy-mm-dd RO2908_RO3255

- **April 30, 2018** – Soil Import Management Plan
  File to be named: WP_R_yyyy-mm-dd RO2908_RO3255

If you have any questions, please call me at (510) 567-6767 or send me an electronic mail message at dilan.roe@acgov.org.

Sincerely,

Dilan Roe, PE, C73703
Chief – Land Water Division

Date: 2018.01.31 12:15:53 -08'00'
Drew J. York
Senior Hazardous Materials Specialist

Enclosure: Attachment 1 – Responsible Party (ies) Legal Requirement/Obligations Instructions
Attachment 2 – Electronic File Naming Conventions

cc: Colleen Winey, QIC 80201, Zone 7 Water Agency, 100 North Canyons Parkway
Livermore, CA 94551 (*Sent via E-mail to: cwiney@zone7water.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*)
Natasha Sihota, CEMC, (Sent via E-mail to: NSihota@chevorn.com)
Katherine Szymanowski, Arcadis, (*Sent via E-mail to:* Katherine.Szymanowski@arcadis.com)
Paresh Khatri, ACDEH (*Sent via E-mail to: paresh.khatri@acgov.org*)
Drew York, ACDEH (Sent via E-mail to: andrew.york@acgov.org)
Dilan Roe, ACDEH (*Sent via E-mail to: dilan.roe@acgov.org*)
Electronic File, GeoTracker

ATTACHMENT 1

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** December 14, 2017
	ISSUE DATE: July 25, 2012
	PREVIOUS REVISIONS: September 17, 2013, May 15, 2014, December 12, 2016
SECTION: ACDEH Procedures	**SUBJECT:** Responsible Party(ies) Legal Requirements / Obligations

REPORT & DELIVERABLE REQUESTS

Alameda County Department of Environmental Health (ACDEH) Cleanup Oversight Programs, Local Oversight Program (LOP) and Site Cleanup Program (SCP) require submission of all reports in electronic form to the State Water Board's (SWB) GeoTracker website in accordance with California Code of Regulations, Chapter 30, Division3, Title 23 and Division 3, Title 27.

Leaking Underground Fuel Tank (LUFT) Cases

Reports and deliverable requests are 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 (RP) in conjunction with an unauthorized release from a petroleum underground storage tank (UST) system.

Site Cleanup Program (SCP) Cases

For non-petroleum UST cases, reports and deliverables requests are pursuant to California Health and Safety Code Section 101480.

ELECTRONIC SUBMITTAL OF REPORTS

A complete report submittal includes the PDF report and all associated electronic data files, including but not limited to GEO_MAP, GEO_XY, GEO_Z, GEO_BORE, GEO_WELL, and laboratory analytical data in Electronic Deliverable Format™ (EDF). Additional information on these requirements is available on the State Water Board's website (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/)

- Do not upload draft reports to GeoTracker
- Rotate each page in the PDF document in the direction that will make it easiest to read on a computer monitor.

GEOTRACKER UPLOAD CERTIFICATION

Each report submittal is to include a GeoTracker Upload Summary Table with GeoTracker valid values[1] as illustrated in the example below to facilitate ACDEH review and verify compliance with GeoTracker requirements.

GeoTracker Upload Table Example

Report Title	Sample Period	PDF Report	GEO_MAPS	Sample ID	Matrix	GEO_Z	GEO_XY	GEO_BORE	GEO_WELL	EDF
2016 Subsurface Investigation Report	2016 S1	✓	✓	Effluent	SO	☐	☐	☐	☐	✓
2012 Site Assessment Work Plan	2012	✓	✓			☐	☐	☐	☐	☐
2010 GW Investigation Report	2008 Q4	✓	✓	SB-10	W	✓	☐	☐	☐	✓
				SB-10-6	SO	☐	☐	☐	☐	✓
				MW-1	WG	✓	✓	✓	✓	✓
				SW-1	W	✓	✓	✓	✓	✓

[1] GeoTracker Survey XYZ, Well Data, and Site Map Guidelines & Restrictions, CA State Water Resources Control Board, April 2005

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** NA
	ISSUE DATE: December 14, 2017
	PREVIOUS REVISIONS: September 17, 2013, May 15, 2014, December 12, 2016
SECTION: ACDEH Procedures	**SUBJECT:** Responsible Party(ies) Legal Requirements / Obligations

ACKNOWLEDGEMENT STATEMENT

All work plans, technical reports, or technical documents submitted to ACDEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to the State Water Board's GeoTracker website." This letter must be signed by the Responsible Party, or legally authorized representative of the Responsible Party.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6731, 6735, and 7835) 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 licensed or certified professional and include the professional registration stamp, signature, and statement of professional certification. Additional information is available on the Board of Professional Engineers, Land Surveyors, and Geologists website at: http://www.bpelsg.ca.gov/laws/index.shtml.

UNDERGROUND STORAGE TANK CLEANUP FUND

For LUFT cases, RP's non-compliance with these regulations may result in ineligibility to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse the cost of cleanup. Additional information is available on the internet at: https://www.waterboards.ca.gov/water_issues/programs/ustcf/

AGENCY OVERSIGHT

Significant delays in conducting site assessment/cleanup or report submittals may result in referral of the case to the Regional Water 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.

ATTACHMENT 2

Alameda County Environmental Cleanup Oversight Programs (LOP and SCP)	**REVISION DATE:** August 1, 2017 **PREVIOUS REVISIONS:** July 17, 2017, November 8, 2016, December 15, 2015, December 16, 2014, June 19, 2013, June 15, 2011, March 26, 2009, April 29, 2008 **ISSUE DATE:** June 16, 2006
SECTION: Miscellaneous Administrative Topics & Procedures	**SUBJECT:** File Names for Electronic Reports

Format: REPORT_NAME_R_YYYY-MM-DD
Ex: SWI_R_VOL1_2006-05-25

LOP and SCP (VRAP) INCOMING REPORTS AND LETTERS	
Document Name	**Abbreviation File Name= Abbreviation + Date (yyyy- mm-dd)**
Abandoned Well Information/Water Supply Well Information	ABWELLINF_R
Addendum	ADEND_R (added after report name)
Additional Information Report	ADD_R
Analytical Reports (Loose data sheets not in report)	ANALYT_R
As Built Drawings (or Plans)	AS_BUILT
Case File Scanned By OFD	CASE_FILE
Cleanup and Abatement Report	CAO_R
Case Transfer Form (from CUPA)	CASE_TRNSFR_F
Conduit Study/Well Search/Sensitive Receptor/Well Survey/Preferential Pathway Study	COND_WELL_R
Corrective Action Plan (CAP)	CAP_R
Correspondence	CORRES_L
Court Injunctions	INJ_L
Development Plans (Includes Plan Set, Cross-sections, and Related Drawings)	DEV_PLAN_date
Development Schedule (Project Schedule, Gant Chart, etc.)	DEV_SCHD_date
DWR Confidential Well Logs (Report containing)	report name_R_CONFIDENTIAL_YYYY-MM-DD (Ex: SWI_R_CONFIDENTIAL_YYYY-MM-DD)
DWR Well Completion Report-Confidential (Loose well logs)	DWR_WELL_CONFIDENTIAL_YYYY-MM-DD (Date of Well Log)
ESI/DAR (Environmental Site Investigation, Data Assessment Report	ESI_R
Excavation Report	EX_R
Extension Request Letter	EXT_RQ_L
Fact Sheet	FACT_SHT

Feasibility Study	FEASSTUD_R
Groundwater Monitoring/Quarterly Summary Report	GWM_R
Financial Assurance/Letter of Credit	FNCL_ASSRNC_LOC
Interim Remedial Action Plan	IRAP_R
Interim Remediation Results (Includes Pilot Test Reports, Vapor Mitigation Reports, Soil Reports, Free Product Removal Reports, & Dual-Phase Extraction Reports)	IR_R
Lawsuit	LAWSUIT_R
Migration Control Report	MIG_R
Miscellaneous Report/Soil Sample	MISC_R
Miscellaneous Sample Report (analytical results)	MISC_SAMP_R
Notification Letter	NOT_L
NPDES Miscellaneous Reports	NPDES_R
Operations & Maintenance Plan	OM_P
Operations & Maintenance Report	OM_R
Pay for Performance	PFP_R
Petition	PETITION_R
Phase 1 Environmental Assessment Report	PHASE1_R
Photos	PHOTO_date
Preliminary Site Assessment Report/Phase 2 (historic reports only)	PSA_R
Remedial Action Plan	RAP_R
Remedial Design & Implementation Plan	RDIP_R
Remediation Progress Report	REM_R
Request for Closure	RFC(_L or _R)
Risk Assessment Report	RISK_R
Risk Based Corrective Action	RBCA_R
List of Landowners Forms	LNDOWNR_F_DATE
SB2004 Letter of Commitment	LOC_L
Site Conceptual Model/Conceptual Site Model	SCM_R
Site Health & Safety Plan	SFTY_PLAN_R
Site Management	SITE_MANAGE_R_
Site Management Plan	SMP_R
Site Summary Report	SITE_SUM_R

Soil and Water Investigation Report (Includes soil gas/vapor reports, indoor, additional site investigation, well installation, site characterization, cross section, indoor air, additional onsite investigation, Phase II/preliminary site assessment)	SWI_R
Soil Disposal Report	SOIL_DSPL_R
Source Area Characterization	SOURCAREA_R
State Information	STATE_INFO (no date)
Status Report(monthly remediation status reports addressed to sanitary district requires no stamp/perjury	STAT_R
Tank/Tank System Removal Report	TNK_R
Tentative Order Report	TENT_R
Unauthorized Release Form	URF_R
UST Sampling Report	UST_SAMP_R
USTCF 5 Year Review	USTCF_5YR
USTCF issued Public Notice	USTCF_PP_L
Well Construction Report (limited to water supply wells)	WELL_CST_R
Well Decommissioning Report/Letter (well destruction/abandonment)	WELL_DCM_R
Work Plan	WP_R

LOP and SLIC ACEH OUTGOING LETTERS AND CASE FILE DOCUMENTATION	
Document Name	**Abbreviation** **File Name= Abbreviation + Date (yyyy-mm-dd)**
90 Day Letter	90D_L
CAP Approval	CAP_AP_L
RP Certification of Public Notice	CAP_CERT_L
CAP Public Participation Letter	CAP_PP_L
CAP Public Participation Letter to RP	CAP_PPRP_L
Certified Mail Receipt	CERT_MAIL_RECEIPT
Cleanup and Abatement Order	CAO_L
Closure Public Participation Letter	CL_PP_L
Closure Package (Letter, RACC, Summary, Deed Restriction)	CLOS_L
Correspondence	CORRES_L
Deed Restriction	DEED_L_ (Copied from CLOS_L_)
Directive Letter containing Public Notice and/or Landowner request form	DIR_PP_L
Directive Letter (Landowner form, site management requirements, well decommission scheduling prior to closure of PP, copy of PP to all RPs)	DIR_L
Enforcement	ENF_L
Enforcement Referral Letter	ENF_REF_L
Extension Approval Letter	EXT_AP_L
Extension Denial Letter	EXT_DNY_L
Fund Requests	FUND_REQ_L
Final Voluntary Remedial Action Agreement	FVRAA_date
GeoTracker info	GEOTRACK_R
Late Letter	LATE_L
List of Landowners Forms	LNDOWNR_F_DATE
Mailing List for Public Notice in Excel Format	MAIL_PP_DATE
Maps & Assessor's Parcel Information	MAPS_ASSESSOR (no date)
Meeting Agenda, Minutes, Sign in Sheet	MEETING
Miscellaneous Letter	MISC_L
New Landowner Letters	LNDOWNR_REQ_L
Notice of Responsibility	NOR_L
Notice of Violation	NOV_L
Phone Log	PHONE_LOG
Photos	PHOTO_date
Post Closure Monitoring	PCMP_L
QA/QC Checklist (confidential)	QAC_report name_date
Responsible Parties Information	RPINFO_L_DATE OF THE LETTERHEAD
Returned Mail	RTN_MAIL_date

Site Visit/Inspection Report	SITEVISIT_R
Transfer Letter	TRANS_L
UST Permit	UST_PRMT
Voluntary Remedial Action Notice to State Agencies	VRA_NOTICE
Voluntary Remedial Action Request Form from RP	VREQ_F

APPENDIX B

GHD Soil Vapor Documents

DAILY FIELD REPORT

Project Name: 307233	GHD PM: Brian Silva	Field Rep: Ben S.
Project Number: 6312264	Date: 1-30-18	Site Address: 2259 First St. Livermore
General Tasks: Install VP-4 + VP-5		
Emergency Drill Conducted: NO		
HASP Meeting Conducted (Y/N):	Equipment Checked (Y/N):	~~PID~~ Calibrated (Y/N): LEL

Time	Activity/Comments	SWA
900	GHD + Confluence on site - HASP meeting + JSA review	
915	LEL delivered	
920	EX + PTW completed and sent to Brian + Carryl	
945	Carryl + Brian approved permit Begin digging @ ~~VP-4~~ VP-4 first	
1000	Carry on site	
1130	Finish VP-4. installed TD = 6'8"	
1145	Begin set up @ VP-5 - ~~Start~~ Review JSA for core machine - Begin core	
1225	- ~~Hit~~ pipe @ ~~first~~ location VP-5 - Call Carryl to discuss. said to move over to center of flag. Core out in middle of flag - concrete slurry to ~2 fbg. able to get through it	
1407	call Carryl refusal @ 4.5' at VP-5 She said to keep trying for 10 more minutes large rock @ 4.5 fbg. Refusal, set well Screen at 4'2". Brian + carryl agreed. set well - concrete work clean up site. take one waste soil sample	
1545	offsite	
	Drum located in Northeast corner of site	
1730	Stop in Elk Grove for drive break + dinner	
1900	home (office) -	

SWA Key:	1: SPSA/Task Change	2: Pedestrian in Proximity	3: Unauthorized Personnel	4: Review Work Process
5: Inspection	6: Safety Orientation	7: Uncontrollable Factor	8: Minor First Aid	9: Major (explain in notes)

Hours _____ Miles _____ Other _____ Shared _____

DAILY FIELD REPORT

Project Name: Chevron 307233	GHD PM: B. Silva	Field Rep: B. Summerhalt
Project Number: 312264	Date: 2-2-18	Site Address: 2259 First St Livermore CA
General Tasks: Sample VP-4, VP-5 + VP1-5		
Emergency Drill Conducted:		
HASP Meeting Conducted (Y/N):	Equipment Checked (Y/N):	PID ~~Calibrated (Y/N):~~

Time	Activity/Comments	SWA
825	leave Roseville office	
1035	on site - Start @ VP-5 sent PTW to Brian - review H+S	
	Sample VP-5 @ 1102	
	Sample VP1-5 @ 1127	
	Sample VP-4 @ 1212	
	~~Sap~~ Duplicate taken @ VP-4	
1315	GHD off site	
1505	Drop off samples @ AT in Folsom	
1515	Drop off he meter + LEL @ UPS store in Folsom	
1600	Back at Roseville office unload Equipment	
	Took pictures of new wells VP-4 + VP-5	

A Key:	1: SPSA/Task Change	2: Pedestrian in Proximity	3: Unauthorized Personnel	4: Review Work Process
5: Inspection	6: Safety Orientation	7: Uncontrollable Factor	8: Minor First Aid	9: Major (explain in notes)

Hours _____ Miles _____ Other _____ Shared _____

Boring/Well Name VP-4 Page 1 of 1

PE/PG

Utility Cleared to

Total Depth 6' 8"

Date Started 1-30-18

Date Completed 1-30-18

Screened Interval set @ 6'2" (1" SS screen)

Depth to water (first encountered) N/A

Depth to water (static)

Located Eastern portion of park

Misc. Notes:

Client Name Chevron EMC

Job/Site Name 307233

Location 2259 First St. Livermore

Project Number 312264

Driller Confluence Env. Services

Drilling Method Hand Auger

Boring Diameter 3"

Logged by Ben Sunnarsett

Depth/Sample Interval	Time	Sample ID	PID	Well Construction	U.S.C.S. Symbol	Geologic Descriptions and Comments	Color	Penetration Resistance/ Blow Counts	Moisture	Estimated Percentages: Clay	Silt	Sand	Gravel	Estimated Plasticity
0				Hydrated Bentonite		Sandy gravel with silt gravel fine to coarse with cobbles, fine to coarse sands	brn		m		25	30	45	N
5			0.0	5'8" 6'2" 6'8"										
10														
15														
20														
25														
30														

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Boring/Well Name VP-5 Page 1 of 1

PE/PG

Utility Cleared to

Total Depth 4.5'

Date Started 1-30-18

Date Completed 1-30-18

Screened Interval 4'-2" (1" SS screen)

Depth to water (first encountered) N/A

Depth to water (static)

Located sidewalk in front of Pete's

Misc. Notes:

Client Name Chevron EMC

Job/Site Name 307233

Location 2259 First St Livermore

Project Number 312264

Driller Confluence Env. Services

Drilling Method Hand Auger

Boring Diameter 3"

Logged by Ben Summerset

Depth/Sample Interval	Time	Sample ID	PID	Well Construction	U.S.C.S. Symbol	Geologic Descriptions and Comments	Color	Penetration Resistance/ Blow Counts	Moisture	Estimated Percentages: Clay	Silt	Sand	Gravel	Estimated Plasticity
0				Hydrated Bentonite	Concrete	8" of sidewalk (concrete) concrete slurry to 2 fbg								
			0.0		3'8" 4.5'	Silty gravel + cobbles with sand Fine to Coarse gravel + sands	brn		Dry		30	20	50	N
5						refusal @ 4.5 fbg large rock at bottom of borehole								
10														
15														
20														
25														
30														

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SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: VP-1-S **Date:** 2-2-2018

Job/Site Name: CEMC 307233 **Technician:** Ben S.

Project No. 312264 **PM:** Brian Silva

Site Address: 2259 First Street, Livermore, CA

Vapor Sampling Apparatus Pressure Testing

Time	Vacuum Reading	Unit	Comments
1107	26	in/Hg	
1117	26	in/Hg	PASS

Purge Volume

Calculated Purge Volume: 0.12 liters @ 43 seconds

Time	Flow	Volume	
1119	167 ml/min	0.12	purged

Sample Collection

Flow Control Orifice Setting: 167 ml/min Summa Canister ID: IL2339

Summa Canister Size: 1 liter Analysis: See COC

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum
1120	30	1127	5

Notes:

Helium % = >10%

N:\US\Rancho Cordova\Projects\Field Forms\GHD\[Soil Vapor Sampling Form.xls]SV form

SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: VP-4 **Date:** 2-2-2018

Job/Site Name: CEMC 307233 **Technician:** Ben S.

Project No. 312264 **PM:** Brian Silva

Site Address: 2259 First Street, Livermore, CA

Vapor Sampling Apparatus Pressure Testing

Time	Vacuum Reading	Unit	Comments
1147	18	in/Hg	
1147	18	in/Hg	Pass

Purge Volume

Calculated Purge Volume: 0.14 liters @ 52 seconds

Time	Flow	Volume	
1159	167 ml/min	0.14 Liter	

Sample Collection

Flow Control Orifice Setting: 167 ml/min Summa Canister ID: 1L2503

Summa Canister Size: 1 liter Analysis: See COC

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum
1202	28	1212	5

Notes:

Dup # 1L2330

Helium % = 710 ppm

N:\US\Rancho Cordova\Projects\Field Forms\GHD\[Soil Vapor Sampling Form.xls]SV form

SOIL VAPOR SAMPLING DATA SHEET

Soil Vapor Sampling Point ID: VP-5 **Date:** 2-2-2018

Job/Site Name: CEMC 307233 **Technician:** Ben S.

Project No. 312264 **PM:** Brian Silva

Site Address: 2259 First Street, Livermore, CA

Vapor Sampling Apparatus Pressure Testing

Time	Vacuum Reading	Unit	Comments
1024	29	in/Hg	
1039	29	in/Hg	Pass

Purge Volume

Calculated Purge Volume: 0.11 liters @ 39 seconds

Time	Flow	Volume	
1053	167 ml/min	0.11	Purged

Sample Collection

Flow Control Orifice Setting: 167 ml/min Summa Canister ID: 12426

Summa Canister Size: 1 liter Analysis: See COC

Time - Begin Sampling	Canister Vacuum	Time - End Sampling	Canister Vacuum
1054	30	1102	5

Notes:

Helium % = 710%

N:\US\Rancho Cordova\Projects\Field Forms\GHD\[Soil Vapor Sampling Form.xls]SV form

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Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630-4719
(916) 985-1000 FAX (916) 985-1020

Project Manager Brian Silva

Collected by: (Print and Sign) Ben Summerell

Company GHD Email brian.silva@ghd.com

Address 4080 Golderado Cir. City Cameron Park State CA Zip 95682

Phone 530-387-5713 Fax

Project Info:

P.O. #

Project # 312264

Project Name CEMC 307233

Turn Around Time:

☐ Normal

☒ Rush 5 days *specify*

Lab Use Only

Pressurized by:

Date:

Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	VP1-5	1L2339	2-2-2018	1127	TPHg, BTEX by	30	5		
	VP-4	1L2503		1212	TO-15; Oxygen, CO2,	28	5		
	VP-5	1L2426		1102	N, methane, and	30	5		
	Dup	1L2330		—	helium by ASTMD-1946	28	5		

Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
2-2-18 / 1505	FedEx 2/2/18 1505
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time
Relinquished by: (signature) Date/Time	Received by: (signature) Date/Time

Notes:

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	FED		NA	Good	Yes No None	

Form 1293 rev.11

FIRST STREET

LIVERMORE AVENUE

BRICK

PLANTER

PLANTER

PLANTER

BUILDING

PEETS COFFEE

BENCH (TYP.)

CANOPY

Drum

UTILITY VAULTS

MW-1
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
CPT4
CPT5

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
VP-4
VP-5

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
- PROPOSED SOIL VAPOR PROBE LOCATION

CRA

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

Figure 2

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

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2/9/2018
Mr. Ben Summersett
GHD
943 Reserve Drive

Roseville CA 95678

Project Name: CEMC 307233
Project #: 312264
Workorder #: 1802067A

Dear Mr. Ben Summersett

The following report includes the data for the above referenced project for sample(s) received on 2/2/2018 at Air Toxics Ltd.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

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WORK ORDER #: 1802067A

Work Order Summary

CLIENT:	Mr. Ben Summersett GHD 943 Reserve Drive Roseville, CA 95678	**BILL TO:**	Ms. Carryl MacLeod Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
PHONE:	916-889-8900	**P.O. #**	SO#0015247972
FAX:	916-677-3687	**PROJECT #**	312264 CEMC 307233
DATE RECEIVED:	02/02/2018	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	02/09/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP1-5	TO-15	4.3 "Hg	15.4 psi
02A	VP-4	TO-15	3.7 "Hg	14.9 psi
03A	VP-5	TO-15	3.9 "Hg	15 psi
04A	Dup	TO-15	3.7 "Hg	15.4 psi
05A	Lab Blank	TO-15	NA	NA
06A	CCV	TO-15	NA	NA
07A	LCS	TO-15	NA	NA
07AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 02/06/18

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
EPA Method TO-15
GHD
Workorder# 1802067A

Four 1 Liter Summa Canister (100% Certified) samples were received on February 02, 2018. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: VP1-5

Lab ID#: 1802067A-01A

No Detections Were Found.

Client Sample ID: VP-4

Lab ID#: 1802067A-02A

No Detections Were Found.

Client Sample ID: VP-5

Lab ID#: 1802067A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	1.2	2.4	4.4	9.3

Client Sample ID: Dup

Lab ID#: 1802067A-04A

No Detections Were Found.

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Client Sample ID: VP1-5

Lab ID#: 1802067A-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020509**	**Date of Collection: 2/2/18 11:27:00 AM**	
Dil. Factor:	**2.39**	**Date of Analysis: 2/5/18 03:44 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.8	Not Detected
Toluene	1.2	Not Detected	4.5	Not Detected
Ethyl Benzene	1.2	Not Detected	5.2	Not Detected
m,p-Xylene	1.2	Not Detected	5.2	Not Detected
o-Xylene	1.2	Not Detected	5.2	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	490	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	110	70-130

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Client Sample ID: VP-4

Lab ID#: 1802067A-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020511**	**Date of Collection: 2/2/18 12:12:00 PM**	
Dil. Factor:	**2.30**	**Date of Analysis: 2/5/18 04:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Toluene	1.2	Not Detected	4.3	Not Detected
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	470	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: VP-5

Lab ID#: 1802067A-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020512**	**Date of Collection: 2/2/18 11:02:00 AM**	
Dil. Factor:	**2.32**	**Date of Analysis: 2/5/18 05:14 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Toluene	1.2	2.4	4.4	9.3
Ethyl Benzene	1.2	Not Detected	5.0	Not Detected
m,p-Xylene	1.2	Not Detected	5.0	Not Detected
o-Xylene	1.2	Not Detected	5.0	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	470	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: Dup

Lab ID#: 1802067A-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020513**	**Date of Collection: 2/2/18**	
Dil. Factor:	**2.34**	**Date of Analysis: 2/5/18 05:40 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	1.2	Not Detected	3.7	Not Detected
Toluene	1.2	Not Detected	4.4	Not Detected
Ethyl Benzene	1.2	Not Detected	5.1	Not Detected
m,p-Xylene	1.2	Not Detected	5.1	Not Detected
o-Xylene	1.2	Not Detected	5.1	Not Detected
TPH ref. to Gasoline (MW=100)	120	Not Detected	480	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	90	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1802067A-05A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020507**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 12:21 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.50	Not Detected	1.6	Not Detected
Toluene	0.50	Not Detected	1.9	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
m,p-Xylene	0.50	Not Detected	2.2	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TPH ref. to Gasoline (MW=100)	50	Not Detected	200	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	93	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: CCV

Lab ID#: 1802067A-06A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020503**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 10:08 AM**	

Compound	**%Recovery**
Benzene	104
Toluene	110
Ethyl Benzene	108
m,p-Xylene	110
o-Xylene	112
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCS

Lab ID#: 1802067A-07A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 10:33 AM**	

Compound	%Recovery	Method Limits
Benzene	103	70-130
Toluene	111	70-130
Ethyl Benzene	109	70-130
m,p-Xylene	111	70-130
o-Xylene	117	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	88	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCSD

Lab ID#: 1802067A-07AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**3020505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 10:58 AM**	

Compound	%Recovery	Method Limits
Benzene	103	70-130
Toluene	111	70-130
Ethyl Benzene	108	70-130
m,p-Xylene	110	70-130
o-Xylene	117	70-130
TPH ref. to Gasoline (MW=100)	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	89	70-130
4-Bromofluorobenzene	106	70-130

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2/9/2018
Mr. Ben Summersett
GHD
943 Reserve Drive

Roseville CA 95678

Project Name: CEMC 307233
Project #: 312264
Workorder #: 1802067B

Dear Mr. Ben Summersett

The following report includes the data for the above referenced project for sample(s) received on 2/2/2018 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1802067B

Work Order Summary

CLIENT:	Mr. Ben Summersett GHD 943 Reserve Drive Roseville, CA 95678	**BILL TO:**	Ms. Carryl MacLeod Chevron U.S.A. Inc. 6001 Bollinger Canyon Road L4310 San Ramon, CA 94583
PHONE:	916-889-8900	**P.O. #**	SO#0015247972
FAX:	916-677-3687	**PROJECT #**	312264 CEMC 307233
DATE RECEIVED:	02/02/2018	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	02/09/2018		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	VP1-5	Modified ASTM D-1946	4.3 "Hg	15.4 psi
02A	VP-4	Modified ASTM D-1946	3.7 "Hg	14.9 psi
03A	VP-5	Modified ASTM D-1946	3.9 "Hg	15 psi
04A	Dup	Modified ASTM D-1946	3.7 "Hg	15.4 psi
05A	Lab Blank	Modified ASTM D-1946	NA	NA
05B	Lab Blank	Modified ASTM D-1946	NA	NA
06A	LCS	Modified ASTM D-1946	NA	NA
06AA	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 02/09/18

Technical Director

Certification numbers: AZ Licensure AZ0775, NJ NELAP - CA016, NY NELAP - 11291,
TX NELAP - T104704434-16-11, UT NELAP CA0093332016-7, VA NELAP - 8113, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005, Effective date: 10/18/2016, Expiration date: 10/17/2017.
Eurofins Air Toxics Inc.. certifies that the test results contained in this report meet all requirements of the NELAC standards

LABORATORY NARRATIVE
Modified ASTM D-1946
GHD
Workorder# 1802067B

Four 1 Liter Summa Canister (100% Certified) samples were received on February 02, 2018. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***ASTM D-1946***	***ATL Modifications***
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a >/= 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:
B - Compound present in laboratory blank greater than reporting limit.
J - Estimated value.
E - Exceeds instrument calibration range.
S - Saturated peak.
Q - Exceeds quality control limits.
U - Compound analyzed for but not detected above the detection limit.
M - Reported value may be biased due to apparent matrix interferences.
File extensions may have been used on the data analysis sheets and indicates as follows:
a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: VP1-5

Lab ID#: 1802067B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	18
Nitrogen	0.24	80
Carbon Dioxide	0.024	2.5

Client Sample ID: VP-4

Lab ID#: 1802067B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	19
Nitrogen	0.23	79
Carbon Dioxide	0.023	2.0

Client Sample ID: VP-5

Lab ID#: 1802067B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	20
Nitrogen	0.23	79
Carbon Dioxide	0.023	0.96

Client Sample ID: Dup

Lab ID#: 1802067B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	19
Nitrogen	0.23	79
Carbon Dioxide	0.023	2.0

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Client Sample ID: VP1-5

Lab ID#: 1802067B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020507**	**Date of Collection: 2/2/18 11:27:00 AM**	
Dil. Factor:	**2.39**	**Date of Analysis: 2/5/18 12:05 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.24	18
Nitrogen	0.24	80
Carbon Dioxide	0.024	2.5
Methane	0.00024	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: VP-4

Lab ID#: 1802067B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020508**	**Date of Collection: 2/2/18 12:12:00 PM**	
Dil. Factor:	**2.29**	**Date of Analysis: 2/5/18 12:40 PM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Oxygen	0.23	19
Nitrogen	0.23	79
Carbon Dioxide	0.023	2.0
Methane	0.00023	Not Detected
Helium	0.11	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

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Client Sample ID: VP-5

Lab ID#: 1802067B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020509**	**Date of Collection: 2/2/18 11:02:00 AM**	
Dil. Factor:	**2.32**	**Date of Analysis: 2/5/18 01:04 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	20
Nitrogen	0.23	79
Carbon Dioxide	0.023	0.96
Methane	0.00023	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

eurofins | Air Toxics

Client Sample ID: Dup

Lab ID#: 1802067B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020510**	**Date of Collection: 2/2/18**	
Dil. Factor:	**2.33**	**Date of Analysis: 2/5/18 01:26 PM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.23	19
Nitrogen	0.23	79
Carbon Dioxide	0.023	2.0
Methane	0.00023	Not Detected
Helium	0.12	Not Detected

Container Type: 1 Liter Summa Canister (100% Certified)

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1802067B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 10:45 AM**	

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Nitrogen	0.10	Not Detected
Carbon Dioxide	0.010	Not Detected
Methane	0.00010	Not Detected

Container Type: NA - Not Applicable

eurofins | Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 1802067B-05B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020503c**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 10:23 AM**	

Compound	**Rpt. Limit (%)**	**Amount (%)**
Helium	0.050	Not Detected

Container Type: NA - Not Applicable

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 1802067B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020502**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 09:59 AM**	

Compound	%Recovery	Method Limits
Oxygen	104	85-115
Nitrogen	90	85-115
Carbon Dioxide	100	85-115
Methane	102	85-115
Helium	103	85-115

Container Type: NA - Not Applicable

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 1802067B-06AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	**10020511**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 2/5/18 02:07 PM**	

Compound	%Recovery	Method Limits
Oxygen	104	85-115
Nitrogen	90	85-115
Carbon Dioxide	99	85-115
Methane	102	85-115
Helium	102	85-115

Container Type: NA - Not Applicable


Peets
TIMES

APP

City of Livermore

Community Development Department
1052 S. Livermore Avenue
Livermore, CA 94550
(925) 960-4500

Encroachment
Permit No. EN180024
Type: Other

PERMIT TO DO WORK IN ACCORDANCE WITH CHAPTER 12.08 OF THE LIVERMORE MUNICIPAL CODE AND SPECIFICATIONS AS ADOPTED BY THE CITY OF LIVERMORE AND ANY SPECIAL REQUIREMENTS SHOWN OR LISTED HEREIN.

Inspection Fee - Simple EN - 2016	$402.00
Permit Fee - EN - 2022	$156.00
Total:	***$558.00***

Applicant/Permittee:
Name: Chevron / GHD
Address: 6001 Bollinger Canyon
San Ramon CA, 94583
Phone:

Contractor:
Name:
Address:
Phone:

PLEASE READ THIS PERMIT CAREFULLY. KEEP IT AT THE WORK SITE. TO ARRANGE FOR AN INSPECTION, PHONE (925) 960-4500 AT LEAST 24 HOURS BEFORE YOU START WORK.

JOB LOCATION: 2259 FIRST ST , LIVERMORE 94550

DESCRIPTION OF WORK: Install 2 soil vapor wells on city property near the intersection of N. Livermore Ave. and First St. The soil vapor wells will be installed by hand. A traffic rated well vault will be installed at the surface.
PM# .

Attention is directec
attached special req

Prosecution of Work: All v ... and must be
completed to the satisfact

Liability and Damages: Th ... which may
arise out of the work perm ... permittee to
perform his obligations un ... ify the City of
Livermore, its officers and ... ns or property
that may arise out of or be

Hold Harmless and Inder ... cted
officials, officers, directors ... luding
reasonable attorney and e ... negligence
and willful misconduct of t

LIVERMORE CALIFORNIA

CITY OF LIVERMORE, CA
RECVD BY: LTOSTADO E1000018343
PAYOR: CONESTOGA ROVERS &
TODAY'S DATE: 01/30/18
REGISTER DATE: 01/30/18 TIME: 11:51

DESCRIPTION	AMOUNT
PUB WORKS-INSPECTION F	$402.00
CUST ID: PERMIT EN180024	
2016 PUB WORKS-INSPECTION FEES	
001-35350	
STREET & CURB PERMITS	$156.00
CUST ID: 2259 FIRST ST	
2022 STREET & CURB PERMITS	
001-31300	
TOTAL DUE:	$558.00

TENDERED: $558.00
CHANGE: $.00
CHECK : $558.00
REF NUM: 71019

Chevron / GHD
Signature of Permitt

By: Ben S... [signature]
Title: Scientist
Date: 1-30-2018
Date Work Completed: ____

By: ____
Date of Issue: 1/25/18
Inspector: ____

APPENDIX C

GHD Historical Soil Analytical Results

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 Xylene	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
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	--

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 Xylene	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
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	--
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	--

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 Xylene	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
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**
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

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 Xylene	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
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
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[d]	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	--

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 Xylene	MTBE	OXYs	Pb
			Reported in milligrams per kilogram (mg/kg) ▲									
ESL												
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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
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	--
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

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 Xylene	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
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
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

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 Xylene	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
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
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	--	--	--
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	--	--	--

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 Xylene	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
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	--	--	--

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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 Xylene	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
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	--	--	--
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	--	--	--

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

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OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
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												
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	--	--	--

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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 Xylene	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
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												
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**
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

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2259 FIRST STREET, LIVERMORE, CALIFORNIA

Sample ID	Date	Depth (fbg)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl-benzene	Total Xylene	MTBE	OXYs	Pb
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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
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

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OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80
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**
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

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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
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	--	--	--

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OEHAA	Residential Land Use		-	-	-	-	-	-	-	-	-	80

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 Francisco Bay Region Interim Final November 2007, revised May 2008.

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 occur during moderate digging associated with routine maintenance and grounds-keeping activities

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.

**** = 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.

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